REPORT OF THE WORKING GROUP ON EDUCATION

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GOVERNMENT OF INDIA

COMMITTEE ON UNEMPLOYMENT

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REPORT
OF
THE WORKING GROUP
ON
EDUCATION

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VIGYAN BHAWAN ANNEXE
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GOVERNMENT OF INDIA
EXPERT COMMITTEE ON UNEMPLOYMENT
VIGYAN BHAVAN ANNEXE
NEW DELHI

DR. L. S. CHANDRAKANT
Chairman

WORKING GROUP ON EDUCATION

D.O. No. 9/3/71-ECU(Tech)-Edu. *Dated the 10th Nov., 1972.*

Dear Shri Bhagavati,

I have great pleasure in submitting herewith the report of the king Group on Education.

The time allowed for the Committee to complete its work was y short as compared to the magnitude and complexity of the oblem of the educated unemployed. The Committee, therefore, is eply conscious of the fact that it was unable to study this problem n such great depth as it would have wished to. We hope that your main Committee will keep this in mind while examining the recommendations of the Group.

On behalf of the Committee and on my own behalf, I wish to record here my appreciation of the valuable assistance given by the Secretariat in the preparation of this report. But for this assistance it would not have been possible for the Group to complete the report within the allotted time.

Thanking you and with kind regards,

Yours sincerely,
(L. S. CHANDRAKANT)

Shri B. Bhagavati,
Chairman,
Expert Committee on Unemployment,
Vigyan Bhavan Annexe,
New Delhi.

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ABBREVIATIONS USED

N.S.S.	National Sample Survey
D.G.E. & T.	Directorate General of Employment and Training
C.S.I.R.	Council of Scientific and Industrial Research
I.A.M.R.	Institute of Applied Manpower Research
L.S.E.	London School of Economics
I.S.I.	Indian Statistical Institute
I.T.	Indian Institute of Technology
.I.	Industrial Training Institute
W.D.	Public Works Department

MAIN CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS

1. The problem of drop outs particularly at school stage has been persisting and little progress has been made in reducing its extent. Out of 100 students joining Class-I, only 40 reach Class-V and 25 reach Class-VII. Similarly, the percentage of students reaching higher secondary stage is only about 16. The majority of these drop out students join their parental occupation, particularly agriculture in rural areas, where there is not much scope for adding more to the labour force and thus add to the problem of under-employment. A suitable job-oriented programme of informal education and training will have to be drawn up for these 'off the stream' students so as to prepare them for self-employment at a higher level of efficiency in their parental occupations or for other emerging trades and occupations in the rural areas on an employed or self-employed basis. (Para 7)

2. The huge expansion in the field of education without its link with economic development or employment opportunities, has led to the problem of imbalance between the out-turn of educational institutions and their demand, resulting in the huge surpluses of educated manpower in the country. The problem of matching the demand and supply of manpower in the country has assumed a particular significance in the context of the growing problem of the educated unemployed in the country. The assessment of demand and supply necessitates a proper manpower planning. (Para 19).

3. The necessity of setting up a proper organisation for continuous manpower requirements and its linkage with enrolment pattern is emphasised. (Para 20)

4. The emphasis in manpower planning is to be shifted from the problem of shortages of manpower to the problem of utilisation, co-ordination between education/training and the specific requirements of the economy and the generation of employment opportunities to absorb the growing addition to the educated labour force. (Para 22)

5. The solution to the problem of the educated unemployed lies in increasing the overall employment opportunities by creating conditions for rapid economic growth. The educational system as such can do little in creating direct employment opportunities except for the few educated unemployed like teachers and educational administrators. But the basic remedial action lies in the increase of the rate of economic growth. (Para 26)

6. The expansion of elementary education is one of the programmes in the education sector which can generate direct employment opportunities for educated unemployed, particularly teachers. A phased programme of enrolment targets for primary and middle stages of education upto the end of the fifth plan is suggested so as

to achieve the target of 100% enrolment for the children of the age-group 6—11 and the target of 75% enrolment for the children of the age-group 11—14 by the end of 1978-79. The implementation of this programme, besides helping in the achievement of the Constitution's directive of free, compulsory and universal education for children upto the age of 14, is likely to generate direct additional employment opportunities for nearly 1.50 lakh teachers and 1200 assistant inspectors of elementary schools every year, in addition to the normal replacements and other ministerial staff. (Para 27)

7. Another programme that can help in generating direct employment opportunities for the educated unemployed within the education sector is a massive programme of 'Mass Literacy'. The implementation of this programme during the Fifth Plan, besides reducing the incidence of illiteracy in the country will generate direct employment opportunities at the rate of 80,000 places annually for teachers for adult literacy classes. (Paras 28-29)

8. The Central Government should consider the need for some form of legislative measure to ensure employment of requisite number of engineers and technicians in industries according to the prescribed scale of production. (Para 31(i))

9. The public works departments of the state governments should insist upon a suitable ratio between the number of engineering personnel employed by a contractor and the size of the work concerned. It will be still better if state governments encourage unemployed qualified engineers themselves to become government contractors either individually or on cooperative basis. In fact, better results will accrue if the public works departments of the government take up more and more engineering works departmentally instead of getting the work done through contractors as this will lead to more employment opportunities. (Para 31(ii))

10. Planning units for engineering designs and projects reports may be created by all state governments, where these are not in existence, and expanded in those places where these are in existence. These units should undertake in large number advance surveys and investigations of a number of irrigation and multipurpose projects, which will generate a large quantum of employment opportunities. More research and development institutions could be set up for creating more jobs for technical hands. (Para 31(iii)&(iv))

11. A massive programme of construction in rural areas, including housing, roads, markets, godowns, etc. and an equally massive programme of housing in the urban and metropolitan areas can generate employment opportunities. (Para 31 (v))

12. The present surpluses of educated personnel in the country are due to the slow rate of growth of the economy and the inability of the organised sector to absorb the out-turn of the educational institutions. There is therefore a need to tap the unorganised sector of the economy where there is great scope because of the "Green Revolution". A suitable training and orientation programme may be drawn up under which local talent may be geared to the expanding

activities and needs of the rural areas with a view to provide self-employment to the educated unemployed in the regions.
(Para 31(vi))

13. The general complaint of the professional employers is that they are not getting the right type of workers. The products of our technical institutions have no practical experience of the jobs for which they are wanted. It has been emphasised that suitable training programmes may be drawn up for providing orientation training to the unemployed technical personnel to make them employable for the specific jobs for which they are wanted. But unless and until the physical targets and directions of economic growth are clearly indicated, it would be difficult to suggest any programme for training. Also for drawing up any programme of training, an agency should be set up to collect requisite data and information on continuing and systematic basis in order to identify the emerging trades and occupations having employment potential. (Para 31 (vii))

14. Some schemes of short-term training are being run by D.G.E. & T. for technical personnel. These may, however, be reviewed and rationalised in view of the changing needs of the occupational pattern. It is suggested that short-term training programmes varying between three months and six months and in some cases extending to one years' duration should be started to impart employable skills to the educated unemployed also for upgrading the skills of persons for jobs requiring higher skills. (Para 31(viii))

15. The state governments should patronise and encourage self-employment of engineers and technicians. The schemes of Kerala and Gujarat in this regard may be taken as guidelines by other States. (Para 31 (ix))

16. As regards the long-term measures, it is observed that there has been a criticism of the present system of education for its having too much academic and literary bias and encouraging role learning and passive receptivity. A link between education and productivity has to be established. Although education as such can do little in creating employment opportunities outside the education sector, it does stimulate generation of employment through the development processes to which it makes a significant contribution and through the development of human resources which facilitate the adoption of advanced technologies, production of newer types of goods and services and through increasing the demand for consumer goods. For this, the present educational system should be revamped so as to make education job-oriented with a technical bias right from the elementary stage of education in order to improve the employability of its products, and to change the attitude of the products of educational institutions in the matter of seeking white-collar jobs. Work experience as a part of general education at the above primary and lower secondary stages may be adopted. At the secondary stage of education, vocationalisation of education besides a programme of work experience in general education upto the lower secondary stage may be adopted and this should normally terminate at the end of the 10th class. (Paras 32—36)

17. In the field of higher education, the general criticism is that there has been an unplanned expansion of education at this level. The enrolment at this stage of education has shown a faster rate of increase than at the primary and secondary stages of education. This top-heavy, lop-sided development of educational structure has defeated the objective of education to be purposeful, productive and employment-oriented. Restrictive admission has been suggested as a corrective measure for curbing the rush for higher education. But in a democratic country like ours, it is extremely difficult to control entry to the higher education. The ever increasing rush towards universities for higher education is not a reflection of the students' lust for scholastic or cultural sophistication. In fact, in many cases it indicates a push from the employment market. To that extent students going in for higher education are actually unemployed in disguise. In the existing social and employment norms, a large majority of persons seek higher education to increase their chances of employability. In the circumstances unless and until employment opportunities are increased rapidly by accelerating the economic growth and the present system of insisting on degree as a pre-requisite minimum qualification for any employment is revised, very little can be done in controlling the rush to the universities for higher education. (Para 35)

18. It is often complained by the employing agencies particularly industries that they are not getting the right type of persons from the technical institutions. They have to be provided with some practical training before they are fit to be put on the jobs for which they are recruited. It is suggested that (a) the training imparted to the craftsman must lay stress on working skill in particular trades and it must be correlated as far as possible to the requirements of the industries located in the vicinity; (b) for the training of personnel for middle and supervisory posts, the diploma course must include some engineering fundamentals and knowledge of labour management but the greatest emphasis must be laid on working skill; (c) in degree course also great stress be laid on practical training aspects and training should be made compulsory and be a part of the curriculum; and (d) there should be a machinery through which the expectations of the employers regarding the kind of training they expect in their prospective employees and the number in each category that may be required may be communicated to the teaching establishments. For this, effective association of the potential employers of engineering personnel with the formulation of courses of studies and training by boards of studies and faculties of various universities and other bodies that award certificates and diplomas in engineering subjects, is necessary. The industrial establishments must take kindly to the idea of providing training facilities to students and consider them as their potential assets. (Para 36)

19. The following steps/studies may be undertaken for forging the desired relationship of education with employment opportunities:— (Para 38)

(i) The Government with the help of agencies like IAMR and DGE&T should evolve a machinery to identify on a continuing basis the requirements of technical personnel for manufacturing units by making an occupational analysis of the data on vacancies intimated to employment exchanges and also follow-up action of the legislative measures at present in force under which industries are required to intimate vacancies to employment exchanges.

(ii) Some machinery should be evolved at the Centre and State headquarters which should undertake perspective manpower estimates of selected categories of manpower on a continuous basis, which should, as far as possible, form the basis of educational planning.

(iii) Field surveys particularly at district level should be undertaken periodically to analyse the changes in the occupational pattern of the economy both in the organised and un-organised sectors. The resulting information should be made available to the educational authorities for giving proper guidance to the students for choosing their courses of study.

(iv) The statistical machinery charged with the collection of educational statistics, both at the Centre and in the States, should be suitably strengthened, so that the required data for manpower estimates, studies and planning may be made available with the minimum time-lag. At present, data with a time-lag of 4-5 years only is available and is thus not helpful for making further studies and estimates.

REPORT OF THE WORKING GROUP ON EDUCATION

I. INTRODUCTION

The Expert Committee on Unemployment constituted a Working Group on Education. The composition of the Working Group was as follows:

1. Dr. L.S. Chandrakant, Educational Adviser (Technical), Ministry of Education & Social Welfare, New Delhi—*Chairman*
2. Dr. P.K. Kelkar, Director, Indian Institute of Technology, Bombay—*Member*
3. Shri D.P. Nayar, Senior Specialist, Planning Commission, New Delhi—*Member*
4. Shri T.R. Doss, Director (Technical Education), Andhra Pradesh, Hyderabad—*Member*
5. Shri K.N. Butani, Director, Institute of Applied Manpower Research, Indraprastha Estate, New Delhi—*Member*
6. Col. S.G. Pendse, Director of Training, D.G.E.&T., New Delhi—*Member*
7. Shri D.V. Narasimhan, Deputy Educational Adviser, Ministry of Education & Social Welfare, New Delhi—*Member*
8. Dr. S.N. Saraf, Director (Pilot Projects & Adult Education), Ministry of Education & Social Welfare, New Delhi—*Member*
9. Prof. T.C. George, Deputy Director, Expert Committee on Unemployment, New Delhi—*Secretary*

Dr. S.N. Saraf went on foreign assignment and in his place Shri J. Veeraraghavan, Director (Adult Education) of the Ministry of Education & Social Welfare was nominated as member.

Shri R.K. Bhandari, Senior Research Officer of the Expert Committee on Unemployment and his staff provided secretarial help in the drafting of the report.

2. The Working Group on Education was assigned the Fourth Term of Reference which is "to suggest specific programmes for promoting productive employment and self employment of the educated unemployed in general and the unemployed technical personnel such as engineers, technicians, etc., in particular, and to suggest measures to rectify the imbalance between the out-turn of educated and technical persons on the one hand and the available employment opportunities on the other". Analytically viewed, this meant that the Working Group had to examine in depth the problem of educated unemployed. For this, it had to ascertain facts, locate the main problem areas, examine possible solutions to the problem and suggest the most suitable ones to the Committee for consideration.

3. The Working Group held two formal meetings, besides informal discussions among members, Chairman and Secretary. In these

meetings the Group discussed mainly the scope of its assignment, besides reviewing the dimensions of the problem of educated unemployed the measures so far taken to tackle it and how for any changes in the educational system could contribute towards its solution. The Working Group was of the opinion that firstly the terms of reference are so broad that it might not be possible for it to examine and analyse every aspect of the problem outlined in this terms of reference. Secondly, there appeared to be a certain amount of overlapping between its own terms of reference as well as those of some other Working Groups of the Committee. It was felt that the recommendations to be made by the Working Groups on Agriculture and Industry might perhaps help in the solution of the problem of the educated unemployed. Thirdly, the educational system itself, as the main supplier of trained manpower can do little in creating more direct employment opportunities, which is primarily the concern of the economic sector. The eventual solution will thus depend upon the economic policies and programmes to be suggested by other concerned Working Groups. The Working Group on Education could at best suggest some modifications or changes in the educational system which can help in building the required link of educational system with employment opportunities. It was agreed that there was not adequate linkage between the developments in the field of education and the corresponding developments in the economic sector, resulting in maladjustment between the demand for and supply of the requisite type of manpower.

4. In the background of the limitations stated in para 3, the Working Group on Education decided to limit the scope of its work to examining only those aspects of education which would have a direct bearing on employment opportunities. In particular, it was decided that the report of the Working Group should be in the form of an "Action Programme" consisting of short-term measures for solving the problem of (a) the present stock of educated unemployed, and (b) number of those already in the pipeline and will be available for employment within 3 to 5 years. For long-term measures, the Group might examine suitable changes in the educational system to make it job-oriented, separately for general education and technical education, if necessary.

5. In recent years there has been a radical change in the manner of viewing the role of education in the society. Education is no longer considered only as a means of developing various faculties of the mind, obtaining book knowledge about the past and present and enriching one's cultural values to become a good citizen; it is on the other hand considered a source of supplying man-power of different levels and a means of preparing people for employment in the various sectors of the economy. In fact, the quality of education is being identified with its suitability for jobs of various descriptions. Its role in employment strategy has, therefore, assumed great significance. The role of education in employment has been well-defined in the ILO Report on Colombia.* It is summarized as follows:—

> "In the first place education determines who has access to jobs, permanence in employment, social mobility between jobs

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*ILO Report on Colombia "Towards Full Employment"—pp. 215—217—Pub. I.L.O. Geneva 1970.

> and occupations indeed a whole complex of factors closely affecting income and employment prospects for the individual and the distribution of incomes throughout the nation.
>
> Secondly, education is a dominant factor in the supply of skills in the labour force, its quickness to acquire new skills through training and experience and its flexibility to adapt to new situations............Ideally, education has three different roles in this—to provide everyone with a basic foundation of literacy and numeracy on which later skills and experience can be built; to provide specific training for certain groups of a sort relevant to manpower needs; to play a continuing role among the adult population.
>
> Thirdly, education can influence personal attitude to work and commitment to national development. . . .
>
> Fourthly, the educational system is itself a large and direct source of employment (teachers).........
>
> Fifthly, education has a major influence on fertility and the rate of population growth. . . .
>
> Sixthly, education exerts an important influence on migration to the towns. . . . ."

6. These six links set out a new strategy to be adopted in the national reconstruction of educational system and fundamental rethinking on the objectives of education. It was felt that it is not necessary, even if it were possible for this Working Group to go into structural changes in the existing educational system of the country. These have already been dealt with extensively in the Report of the Education Commission. What is now needed is to suggest suitable measures to establish the linkage between the educational system and manpower requirements or employment opportunities. It is, however, clear that the existing system of education is not operating as intended. In spite of the great expansion of education at all levels and the adoption of some measures of qualitative improvement, the fact remains that the majority of students on roll today do not get the quantum or quality of education for which the system was designed.

7. The divergence between the original design of the system and the way it actually operates is more serious in three respects; in the high rates of wastage and stagnation as the students move along the system; the enormous differences between the provision of general education and vocational/technical education at different levels of the educational system; and the lop-sided and top-heavy expansion of education. These need to be changed if the employment strategy is to succeed.

Table-I shows the rate of drop-outs during each cycle of the system for group of students entering in 1957-58, 1958-59 and 1959-60. Table-II shows the extent of stagnation of students in various classes of school education. It will be seen that the problem of drop-outs has been persisting and little progress has been made in reducing its extent. Out of 100 students joining Class-I, only 40 reach Class-V and 25 reach Class-VIII. Similarly the percentage of students reaching higher secondary class is only about 16. The majority of these drop-out students join their parental occupation, particularly agriculture in rural areas, where there is not much scope for adding more to the labour force and thus they add to the problem of under-employment in rural areas. A suitable job-oriented programme of informal education and training will have to be drawn up for these "off the stream" students so as to prepare them for self-employment at a higher level of efficiency in their parental occupations/or for other emerging trades and occupations in the rural areas on an employed or self employed basis. Some recommendations in this regard have been made in this report.

TABLE I—*Wastage at Primary Stage* (*Classes* I—VIII)

(Figures in 000's)

Year	Classes							
	I	II	III	IV	V	VI	VII	VIII
1957-58	1,09,08 (100·0)							
1958-59	1,19.99 (100·0)	66,30 (60·8)						
1959-60	1,26,93 (100·0)	71,47 (59·6)	53,51 (49·4)					
1960-61	1,33,91 (100·0)	75,13 (59·2)	58,86 (49·1)	45,93 (42·1)				
1961-62	1,57,46 (100·0)	81,21 (60·6)	63,04 (49·7)	50,40 (42·0)	38,91 (35·7)			
1962-63	1,64,04 (100·0)	90,75 (57·6)	67·19 (50·2)	53,81 (42·4)	42,93 (35·8)	33,19 (30·4)		
1963-64	1,69,06 (100·0)	98,24 (59·9)	74,93 (47·6)	57,55 (43·0)	45,73 (36·0)	36,08 (30·1)	28,89 (26·5)	
1964-65	1,82,40 (100·0)	1,03,74 (61·4)	82,15 (50·1)	64,25 (40·8)	49,64 (37·1)	39,34 (31·0)	32,07 (26·7)	26,53 (24·3)
1965-66	1,88,90 (100·0)	1,07,66 (59·0)	85,51 (50·6)	68,82 (41·9)	53,81 (34·2)	41,96 (31·3)	34,53 (27·2)	28,83 (24·0)
1966-67	1,95,49 (100·0)	1,11,77 (59·2)	87,88 (48·2)	70,85 (41·9)	57,19 (34·9)	45,30 (28·8)	36,37 (27·2)	30,45 (23·9

SOURCE—Ministry of Education and Social Welfare.

TABLE II—*Stagnation at Elementary Stage*, 1964-65

	CLASSES																		
	I		II		III		IV		V		VI		VII		VIII		Total I—VIII		GRAND TOTAL
	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	B.	G.	
Total enrolment as on 31st March 1964-65	1,12,91,990	69,48,612	66,21,111	37,52,420	53,77,902	28,36,778	43,21,354	21,03,873	34,39,841	15,24,406	28,49,708	10,84,669	23,50,638	8,56,575	14,13,397	4,54,624	3,76,65,841	1,95,61,977	5,72,27,818
Percentage of students who are in classes for:																			
(*a*) One year or less ...	75·7	75·1	81·5	80·0	83·3	83·2	84·9	83·6	87·2	84·2	85·7	83·4	87·5	83·1	82·3	76·5	81·6	79·7	81·0
(*b*) 1—2 years ...	18·4	18·5	14·6	15·9	13·3	13·4	12·4	13·6	10·5	13·3	11·2	14·5	10·5	14·7	15·2	21·0	14·5	16·0	15·0
(*c*) 2—3 years ...	4·7	5·1	3·1	3·4	2·7	2·8	2·2	2·4	1·9	2·1	1·8	1·8	1·7	1·9	2·1	2·1	3·1	3·5	3·2
(*d*) 3—4 years ...	1·0	1·0	0·6	0·6	0·5	0·5	0·4	0·3	0·3	0·3	0·2	0·2	0·2	0·2	0·3	0·3	0·6	0·6	0·6
(*e*) Four years and more	0·2	0·3	0·2	0·1	0·2	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·1	0·2	0·2	0.2
Average No. of Years spent by students in each class ...	1·32	1·33	1·23	1·25	1·21	1·21	1·18	1·20	1·15	1·19	1·17	1·19	1·15	1·20	1·21	1·26	1·13	1·26	1·24

SOURCE—Ministry of Education and Social Welfare.

8. Table-III shows the proportion of enrolment receiving vocational education at the secondary stage of education. It will be seen that only about 4 per cent of the students receive vocational education at the lower secondary stage (Classes VII—X) and nearly 40 per cent receive this type of education at the higher secondary stage (Classes XI-XII). Similarly at the University stage, only 30 per cent* students join professional and technical education courses. It is this pre-dominance of general education which produces a mass of educated labour force, which seek white-collared jobs, the scope for which, in any set up of society, is very limited. Even those who are trained in the various vocations and technical courses do not find themselves fit for the emerging trades and vocations and thus add to the number of educated unemployed. The second strategy for establishing the link of the educational system with employment opportunities will, therefore, be the adoption of suitable programme of vocational education and job-oriented training both for 'in the stream' and 'off the stream' educated labour force. Some recommendations in this regard have also been made in this report.

9. There has been some genuine criticism about the top-heavy educational system that has been emerging and which is producing highly educated and technical personnel without having a well-defined objective as to how and where to utilise them efficiently. The educational activities should be closely and sufficiently related to the practical needs of the community as a whole but the present position appears to be one of dismal failure. We have, unfortunately, at present a top-heavy, lop-sided educational structure which does

TABLE III—*Vocational Education at the Secondary Stage*

Stage/years	Enrolment in vocational education (000's)			Percentage of enrolment in vocational education to total enrolment		
	Boys	Girls	Total	Boys	Girls	Total
Classes VII—X						
1950-51	29	18	47	2·2	8·8	3·1
1955-56	39	32	71	2·0	7·9	3·0
1960-61	65	35	100	2·2	4·7	2·7
1965-66	90	47	137	1·9	3·3	2·2
1970-71	222	113	335	3·4	5·0	3·8
Classes XI-XII						
1950-51	105	20	125	42·7	53·6	44·2
1955-56	179	35	214	41·6	49·4	42·7
1960-61	299	59	358	41·7	44·9	42·2
1965-66	477	87	564	40·7	38·5	40·3
1970-71	721	157	878	42·5	40·2	42·1

SOURCE—Education Commission Report (1964—66).

*SOURCE—Ministry of Education and Social Welfare.

not seem to be commensurate with the socio-economic needs of the society. This is not, however, a recent phenomenon, it has its roots in the pre-independence period; only it has become more acute of late.

Table IV gives the picture of this top-heavy expansion of education. It is observed that while primary and secondary education have increased by 33.3 per cent and 34.7 per cent respectively over a period of five years, graduate education and above have increased by more than 65 per cent. In the next five years, as against 40.1 per cent and 72.9 per cent increase in primary and secondary education, university education increased by more than 95 per cent. Similarly in the period ending with 1965-66, the percentage increase has been 45.6, 77.9 and 101.1 respectively in primary, secondary and university stages of education. The same situation can be observed if we read this Table in terms of the number of students in secondary and university stages per thousand of primary students for the given periods. This indicates how fast the expansion of higher education has been making it more and more difficult for the highly educated ones to get absorbed into gainful employment.

"Education should be purposeful, productive and employment oriented, if it is to serve the socio-economic needs of the society."* In this context, the policy of education should be mass education at the elementary stage, diversification of courses at the secondary stage to make these terminal and job-oriented in character and selective admissions at the higher education stage for academically capable

TABLE IV—*Number of students in recognised institutions by level of education*

(Figures in 000

Stage/Level	Year			
	1950-51	1955-56	1960-61	1965-66
Primary	1,86,78	2,45,11	3,36,31	4,88,74
% increase	..	(31·23)	(37·21)	(45·32)
Middle	33,30	48.23	74,80	1,09,77
% increase	..	(44·83)	(55·9)	(46·75)
Secondary	14,87	20,03	34,63	61,56
% increase	..	(34·70)	(72·89)	(77·76)
Pre-university/intermediate	2,21	3,96	4,58	6,24
% increase	..	(79·19)	(15·66)	(36·24)
B.A./B.Sc.	87	1,51	2,99	6,26
% increase	..	(73·56)	(98·01)	(109·36)
M.A./M.Sc.	17	25	46	71
% increase	..	(47·06)	(84·00)	(54·35)
Research	2	3	5	7
% increase	..	(50·00)	(66·66)	(71·43)

SOURCE—Ministry of Education and Social Welfare.

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*Article in Economic Times, February 18, 1972 by Shri Ashok K. Mitra on Manpower Planning Strategy for a new Educational System.

students. Enrolment in technical courses at the degree and diploma levels should be clearly linked, as far as possible with the corresponding manpower estimates. .

10. Expansion of elementary education serves a triple purpose. Firstly, it helps in achieving the constitutional directive of universal, free and compulsory education for all children upto 14 years of age and secondly, it creates at a lower cost a substantial proportion of employment opportunities for educated unemployed particularly for teachers. Thirdly those with just elementary education generally go back to their parental profession and so do not create the problem of additional jobs. Instead their education, duly supported by governmental help through extensive services can become the means of raising the productivity of agricultural and traditional sector. The Working Group, therefore, strongly recommends a suitable phased programme of expansion of elementary education so as to cover the remaining population of school going children of the age-group 6—14. Some recommendations in this regard have already been made in the Interim Report of the Committee and also a similar programme has already been included among the crash programmes for relieving educated unemployment, but what is needed is to expand this programme to the maximum possible extent and improve its quality.

11. Another factor which deserves immediate attention in our opinion is that of 'Adult Education'. Intensive adult literacy programmes of a functional character specially for the illeterate adults of the age-group 15—44 should be taken up in a big way. These programmes, besides enabling the early achievement of the goal of universal literacy embodied in the constitution, would also help in the economic development of the country. Further the lack of interest of illiterate persons in education, which is a major cause for the large number of drop-outs at the primary stage, can be removed through adult education programme. It will also help in improving the professional competence of the trainees, besides creating direct employment opportunities for unemployed teachers who can be employed for running adult literacy classes. A suitable programme in this regard is also recommended in this report.

II. MAGNITUDE OF THE PROBLEM

12. The incidence of unemployment among educated personnel has been increasing over the last few years. However, in order to analyse this problem in true perspective, quantitative and qualitative assessment of the data on educated unemployment among different categories of educated personnel is required. Unfortunately, no precise quantitative assessment of the number of job seekers has been made by any agency—government or non-government. There are, however, three main sources concerned with this subject viz., census reports, N.S.S. schedules and live registers of employment exchanges. Statistics provided by these sources are widely divergent and often irreconciable. Besides all these sources are suffering from inherent limitations both in respect of the scope of their enquiry and the coverage. While census data for 1971 on this subject has not been made available so far, the data published by N.S.S. in their 21st round and collected in subsequent rounds relate to number of unemployed in urban areas only and is also not up-to-date. Besides, there are also certain conceptual problems relating to measurement of unemployment. Live register of employment exchanges are, therefore, left to be the only available source from which some information on this subject can be taken. Besides providing the information with a minimum time-lag, this source has an advantage of providing data with a regular time series and thus can serve at least a good indicator of the problem.

13. The Working Group on Education is not concerned with the precise quantitative assessment of the educated unemployed. This is included in the first terms of reference of the Committee with which a separate panel, appointed by the Committee, is concerned. However, the readily available data on the educated job-seekers has been analysed in the following paragraphs as broad indicators of the dimension of problem of educated unemployed.

14. According to the Live Registers of the employment exchanges, the number of educated job-seekers as on 31st December 1971, was 22.96 lakhs, of whom 3.28 lakhs (or 14.1 per cent) were females. Their distribution by level of education is given below:—

Level of education	Number (in lakhs)	Percentage to Total
Matriculates	12·97	56·49
Above Matriculation and below Graduation :	6·05	26·35
(*i*) Diploma holders	0·55	2·40
(*ii*) Others	5·50	23·95
Graduates :	3·94	17·16
(*i*) Engineers	0·19	0·83
(*ii*) Others	3·75	16·33
Total ..	22·96	(100·00)

It will be seen that graduate job-seekers formed 17.16 per cent of the total educated job-seekers registrants as against 26.35 per cent under-graduates and 56.49 per cent matriculates. The percentage of engineering graduates was less than one per cent and diploma holders 2.40 per cent.

15. Table V below shows how the problem of educated job-seekers, as revealed by the live registers of employment exchanges, has grown up in the last few years:—

TABLE V.—*Number of educated job-seekers on the Live Registers*

(Figures in lakhs)

Serial No.	Level of Education	Number as on 31st December 1966	1967	1968	1969	1970	1971
1.	Matriculates ..	6·20	7·14	8·10	9·10	11·01	12·97
2.	Above matriculation but below graduation ..	2·04	2·52	3·24	4·01	4·44	6·05
	(*i*) Diploma holders	0·19	0·28	0·40	0·45	0·47	0·55
	(*ii*) Others ..	1·85	2·24	2·84	3·56	3·97	5·50
3.	Graduates and above ..	0·93	1·21	1·75	2·15	2·77	3·94
	(*i*) Engineers	0·04	0·07	0·11	0·13	0·17	0·19
	(*ii*) Others ..	0·89	1·14	1·64	2·02	2·61	3·75
	Total ..	9·17	10·87	13·09	15·26	18·22	22·96

It is seen that the total number of educated job-seekers on the live registers of employment exchanges has increased at the annual rate of 30.07 per cent, from 9.17 lakhs in 1966 end to 22.96 lakhs in 1971 end. While the number of graduate registrants as unemployed is shown to have increased from 0.93 lakhs in 1966 to 1.75 lakhs in 1968, giving an annual rate of increase of 44.08 per cent, the number of engineering graduates alone registered an annual increase of 87.5 per cent, from 4,000 in 1966 to 11,000 in 1968. However, during the period from 1968 end to 1971 end, the total number of graduate unemployed increased from 1.75 lakhs in 1968 to 3.94 lakhs in 1971, giving an annual rate of increase of 41.71 per cent; but in case of engineering graduates, the rate of annual increase was only 24.24 per cent. from 11,000 in 1968 to 19,000 in 1971. This shows that while rate of increase of unemployment among engineering graduates was comparatively higher than other graduates from 1966 to 1968, it showed a great decline in the later period from 1968 to 1971. Nevertheless the absolute increase in the registrants in employment exchanges indicates the magnitude of the problem which deserves immediate attention.

Appendix-I gives state-wise and stage-wise details of educated job-seekers on the live registers of employment exchanges as on 31st December 1971. It is seen that West Bengal with 3.69 lakh registrants, ranked number one in reporting the highest number of educated job-seekers followed by U.P. (2.32 lakhs), Kerala (2.01 lakhs), Maharashtra (1.99 lakhs), Tamil Nadu (1.92 lakhs), Andhra Pradesh (1.69 lakhs), Bihar (1.66 lakhs), Mysore (1.40 lakhs) and Madhya Pradesh (1.37 lakhs). In others, the incidence of unemployment among educated was less than one lakh.

16. The above data is, however, suffering from the following limitations: —

(i) The employment exchanges being largely located in urban areas, the unemployed persons in rural areas are substantially under-represented in employment service statistics. However, in case of educated unemployed, this limitation may not affect very much its data, as most of educated personnel belong to urban areas and also those belonging to rural areas are educated enough to get themselves registered with the nearby employment exchanges.

(ii) Registration with employment exchanges being purely voluntary, not all unemployed persons register with the exchanges.

(iii) A number of persons on the live registers are already in employment and register themselves with a view to improve their prospects through alternative employment.

Some data on the third correction factor was available through a sample survey to ascertain the proportion of employed persons, conducted by the D.G.E. & T. in 1968. Similarly information about the second correction factor . was available through the various N.S.S. rounds, of which the last related to the year 1966-67. Both the sets of results were examined by the Dantwala Committee which recommended that the same are not valid and should not e used hereafter. Keeping in view the recommendations of that Committee, the D.G.E. & T. is currently engaged in a fresh sample survey which is likely to give valid results in so far as the third correction factor is concerned. N.S.S. has, however, stopped collecting information on the second correction factor.

17. Table-VI gives at a glance the proportion of unemployed engineers and diploma holders in relation to the stock. It is seen that while the stock of engineers and diploma holders increased from 260 thousands in 1966 to 322 thousands in 1968, the proportion of unmployed among them increased from 10.8 per cent to 17.1 per cent during this period. But, as against an increase in the stock of engineers and diploma holders from 332 thousands in 1968 to 400 thousands in 1970, the proportion of unemployed among them rose only from 17.1 per cent in 1968 to 17.7 per cent in 1970. As this proportion of unemployment in 1970 remained the same as in 1969, it seems the rise in unemployment among engineers has been arrested

and it is hoped that it will ease as a result of the implementation of special measures being undertaken by the Government for relieving unemployment among engineers.

TABLE VI—*Unemployment among engineers and technicians*

(Figures in 000's)

Year	Total stock of engineering graduates and diploma holders	Total number in employment	No. of engineers who secured employment	No. of engineers unemployed	Percentage of unemployed to total stock
1	2	3	4	5	6
1966	260·0	232·4	19·6	27·6	10·8
1967	294·4	254·4	22·0	40·0	13·6
1968	332·0	275·3	20·9	56·7	17·1
1969	368·0	303·0	27·7	65·0	17·7
1970	400·0	329·0	26·0	71·0	17·7

SOURCE—Ministry of Education and Social Welfare.

18. During the course of 1971 census operation, information on various aspects of degree holders and technical personnel was collected and provisional all-India figures in this regard have since been released by Registrar-General of India in the form of G-series tables. These G. Tables, besides giving information about the number of degree holders and technical personnel in each subject/field by status and level of education, give the number of unemployed degree and diploma holders by level of education and by other characteristics.

On the basis of the data contained in G. Tables, C.S.I.R. has made some estimates of unemployed graduates and diploma holders in the conutry. According to these estimates, about 4,21 lakhs degree and diploma holders were unemployed in early 1971, who were seeking employment. Its distribution by status and level of education is given in Table VII.

It is seen that nearly 1.62 lakhs scientific, engineering, technological and medical personnel at degree and diploma levels were unemployed and looking for jobs in early 1971. Arts and Commerce degree holders seeking employment numbered about 2.59 lakhs and thus reported higher incidence of unemployment.

19. The huge expansion in the field of education without its link with economic development or employment opportunities, has led to the problem of imbalance between the out-turn of educational institutions and their demand, resulting in the huge surpluses of educated man-power in the country. The problem of matching the demand and supply of manpower in the country has therefore

assumed a particular significance in the context of the growing problem of educated unemployed in the country. The assessment of demand and supply necessitates a proper manpower planning.

TABLE VII—*Estimated unemployment among graduates and above as per special census enumeration*

Category	Level	Stock (early 1971 CSIR)	Percentage of unemployed seeking employment (Census—February 1971)	Estimated number of unemployed seeking employment
1	2	3	4	5
Agriculture	P.G.	13,500	7·25	980
	G.	47,200	13·32	6,287
Engineering & Tech.	Deg.	1,85,400	11·51	19.782
	Dip.	2,44,400	13·98	34,167
Medicine	Deg.	97,800	5·31	4,411
	Dip.	27,000	10·05	1.021
Science	P.G.	1,39,200	10·05	13,990
	G.	4,20,000	19·18	80.556
Veterinary	Deg.	13,000	5·85	760
Sub-Total		11,87,500	13·64	1,61,954
Arts	P.G.	3,90,700	10·36	40,477
	G.	11,38,700	15·10	1,71.944
Commerce	P.G.	43,800	7·07	3,097
	G.	2,67,800	16·36	43,812
Sub Total		18,41,000	14·09	2,59.330
GRAND TOTAL		30,28,500	13·91	4,21.284

SOURCE—C.S.I.R. Bulletin on Technical Manpower.

20. This need of manpower planning has often been emphasised by various organisations, committees and working groups but so far little efforts seem to have been made to build up the proper machinery of manpower planning in the country. However, it is beyond the scope of this working group to go into the details of the organisational set up of the manpower machinery in the country. This problem, it is hoped, will be studied by another Working Group set up by the Committee for the fifth term of reference which covers this subject. But this Working Group will like to emphasise here the necessity of setting up a proper organisation for the continuous review of manpower requirements and its linkage with enrolment pattern. In the words of Education Commission Report "If India is to achieve its targets of economic growth it must have an adequate supply of educated specialists for each category of job to be performed. Conversely, if there is an excess of trained people in any category, it implies an imprudent use of scarce resources and also creates difficult problems of unemployment of the educated.

Even from the point of view of the individual, some matching of educational patterns and job opportunities is vital. Nothing is more frustrating than to be under-qualified or over-qualified for a job, or to be unemployed because there is no call for one's qualifications. We believe, therefore, that estimates of future manpower needs form a useful basis for regulating enrolment patterns above the primary level".

21. Hitherto the principal focus of manpower planning has been on ensuring the adequate supply of manpower for various development projects in the economic sector. For this, some global estimates have been made of the requirements of various categories of educated manpower at the central level. The expansion of technical, scientific and medical education at various levels were to a great extent influenced by such estimates. But on the whole educational and training facilities were diffused throughout the country not so much on the national economic considerations but on social and political pressures and the aspirations of the people at large. The expansion of general education in particular has not taken place on the basis of manpower estimates. The social demand for education and the constitutional directions regarding the provision of elementary education have dominated decisions in this area. While it is neither possible nor desirable to establish 100 per cent relationship between the out-put of general education and the corresponding manpower estimates, it is desirable to orient its contents and form towards socio-economic needs of the country.

22. We now have our educational and training system which, by and large, can ensure an adequate supply of qualified manpower to suit the requirements of the economic sector for sometime. At present there is a surplus of qualified and educated personnel looking for jobs and this problem is likely to grow in the present state of affairs. The emphasis in manpower planning has, therefore, now shifted from the problem of shortages of manpower to the problem of utilisation, coordination between education/training and the specific requirements of the economy and the generation of employment opportunities to absorb the growing addition of the educated labour force. Shortages in few selected categories, particularly in the area of medical manpower may arise and special care has to be taken thereof.

23. Institute of Applied Manpower Research has made a series of studies on manpower estimates of various categories of educated personnel but a comprehensive review of educational needs vis-a-vis manpower was made by the Education Commission set up by the Government of India in 1964. The methodology adopted by the Commission in forecasting the manpower demands of various sectors of economy was based on the estimates prepared by the Planning Unit of the Indian Statistical Institute and the Unit for Economic and Statistical Studies on Higher Education of the London School of Economics in collaboration with the Perspective Planning Division of the Planning Commission (ISI/LSE estimates). The detailed findings of the ISI/LSE estimates are given in Appendix II.

24. The estimates of ISI/LSE based on an assumed growth rate of 6-7 per cent revealed that the stock of educated manpower would be well in excess of manpowers needs. This would become specially serious from mid 1970 onwards; by 1986 there would be 4 million too many matriculates and 1.5 million too many graduates. But as those estimates were based on growth rate which has not been achieved, there is a need for a further review and updating of this study in consideration of the target growth rate of 5.5 per cent for the fifth plan. Even in regard to the stock, which they took on the basis of the 1961 census, the study needs up-dating.

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III. REVIEW AND RECOMMENDATIONS

25. Several factors appear to have rendered the problem of unemployment as acute as it exists at present among the educated, and particularly among technical personnel. The first and the foremost among these is the ever-growing rush for higher education in the fond hope that a person can raise his social status and economic position only through academic qualifications. Year after year, each State is turning out a large number of matriculates and graduates who are unfit for all avenues of employment except perhaps junior clerical positions. And one just cannot expect enough junior clerical posts in both the private and public sectors to absorb the vast mass of educated young persons qualified in subjects like history, languages, geography, philosophy and elementary mathematics and science. Secondly, the slow rate of economic growth and specially the recession and stagnation in the industrial sector besides reducing the employment opportunities for the educated particularly technical personnel, weakened the pace of growth in the tertiary and administrative sectors resulting in reducing job opportunities for matriculates and graduates in arts, science and commerce. With a target of 5.5 per cent growth rate assumed for the Fifth Plan, the employment opportunities likely to be thrown up by the organised sector are not likely to be enough for absorbing the increasing supply of the educated labour force. It will, therefore, be advisable and desirable to tap the unorganised sector for creating employment opportunities for the educated unemployed as well as to encourage self-employment among them. In this context the content and methodology of the educational system may have to be oriented towards the occupational pattern of the unorganised and the self employed sectors.

26. There are no easy solutions to the poblem of educated unemployment. Yet, given the determination, it should be possible to reduce the severity of the problem through a planned, phased programme spread over the next decade. In a democratic country like ours, it is extremely difficult to control entry to the higher education sector. This can only be achieved by limiting facilities in particular fields of studies and regulating admission on merit. However, it may not be possible in the present set up to resist political pressures to expand facilities for course of study which has popular demand at a particular time. The employment opportunities do play a part in shifting demands from one field to another. In the circumstances, unless employment opportunities are increased rapidly, it will not be possible to balance supply and demand in various fields. There will only be a shift in number of unemployed from one sector to another. Therefore, the remedy seems not to lie in cutting down temporarily the number of entrants into any particular sector of higher education. Perhaps in the present situation only solution that could be suggested is to increase the overall employment opportunities by creating conditions for rapid economic growth. Educational system as such can do little in creating direct employment opportunities. It can of course

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utilise some proportion of educated stock of unemployed as teachers, inspectors, educational administrators and some ministrial staff by expanding facilities particularly at the elementary stage of education which has also a constitutional support. But the basic remedial action lies in the increase of economic rate of growth. This subject falls outside the scope of this working group and it is hoped that other Working Groups directly concerned with this subject matter will examine and-suggest suitable remedial measures to accelerate the growth rate and thereby reduce the huge imbalance that exist at present between the demand and supply of trained and educated manpower. Of course, this Working Group is suggesting in this report short-term measures, which it thinks will be helpful in easing the problem of unemployment among educated, particularly technical hands, but the analytical details of these measures will have to be examined by the concerned agencies or departments. This Working Group has studied the quantum of employment opportunities which the educational system can itself create for the absorption of different categories of educated unemployed, particularly teachers and how best educational system can in the long run be linked with productivity or employment opportunities in order to increase the degree of employability of its products. Some suitable programmes in this regard are being suggested in subsequent paragraphs, but no attempt has been made to review the entire structure of the educational system and suggest suitable changes therein. This has already been comprehensively dealt with in the report of the Education Commission. The Working Group has examined only those aspects of education which have a bearing on economic development or employment opportunities.

27. The expansion of elementary education is one of the programmes in the education sector which can generate large employment opportunities for educated unemployed particularly teachers. The Government of India has already recognised this fact and has launched a crash programme of assisting State Governments for the appointment of 30,000 teachers and 240 inspectors and work-experience teachers besides some improvement programmes of mid-day meals etc. During 1971-72 a provision of Rs. 4.4 crores was made for this purpose. This scheme will be continued in 1972-73 with an outlay of Rs. 12 crores besides a provision for the appointment of a further 30,000 teachers and 240 inspectors, book grants, mid-day meals, etc. But this group feels that the programmes envisaged in the crash programme not only fall short of the requirements to create enough employment opportunities at least for the present stock of nearly 1.52 lakhs of trained teachers and annual out-turn of the same number of teachers but also with the present rate of expansion, we cannot achieve the constitutional directive of free, compulsory and universal education for all children upto the age of 14 even by 2000 A.D. The Group is, therefore, suggesting as already done in the Interim Report of the Committee, a phased programme of enrolment targets for primary and middle stages of education upto the end of the fifth plan, so as to achieve 100% target of the enrolment for the children of the age-group 6—11 and 75% target of the enrolment for the children of the age-group 11—14 by the end of 1978-79. The implementation of this programme, besides helping in the achievement of constitutional directive, is likely to generate direct additional

employment opportunities for nearly 1.50 lakh teachers and 1,200 Assistant Inspectors of primary schools every year in addition to the requirement for normal replacement and other ministerial staff. Appendices III, IV and V give respectively the details of enrolment targets, modus operandi of the programme and financial implications of this programme.

28. Another programme that can help in generating direct employment opportunities for the educated unemployed within the education sector, is a massive programme of adult literacy. Quite a number of programmes for eradicating illiteracy in the country have been and are being taken by the Centre and State Governments but no coordinated and concerted efforts on massive scale seems to have been made in this direction with the result that the number of illiterates in the country has shown an increase from 333 million in 1961 to 386 million in 1971 although the percentage of literacy has incrased from 24.0 per cent in 1961 to 29.4 per cent in 1971. However, the number of illiterates in the age-group 15—44 which is important from the point of view of development of human resources and is directly connected with the production on farms and factories, is little more than 160 million.

29. Considering the importance of the programme of adult education in the context of national development and as a potential for generating direct employment opportunities for educated unemployed, this Working Group recommends the adoption of a programme of 'Mass Literacy' in the Fifth Plan, besides continuing the existing programme of 'Functional Literacy' in an extended way. The programme will have to be suitably phased so that at least 50 million adults of the age-group 15—44 are covered under the programme at the rate of 10 million adults every year, by the end of the fifth plan. This programme, besides helping in improving the position of literacy in the country, will generate direct employment opportunities at the rate of about 80,000 places annually for teachers for adult literacy classes. The details of the programme are given in Appendix VI.

30. The need for establishing clear cut linkage between 'Mass Literacy' programme and 'Functional Literacy' programme is also stressed. Ultimately, all literacy should become functional but in the transitional stage, it is necessary that there should be a proper dovetailing of the two programmes. It is felt that mass programme of literacy might provide the base for implementing functional literacy programme. The other important points of linkages between the two programmes are in regard to the preparation of materials, methods and mass communication techniques used in the functional literacy programme. Further concrete linkage between the two programmes should be provided at the points of training of personnel and organisation and administration.

31. Some of the short-term measures that can help in easing the problem of educated unemployed are listed below. Some of these measures might have already been in operation but in order to re-emphasise the importance of these measures from the point of view

of effective implementation, these are again included in the list enumerated below:

(i) Government should consider the need for some form of legislation which would ensure that every industry employs engineers and technicians according to prescribed scale of production after taking into consideration factors such as manufacturing capacity, technical processes employed, total labour force employed, etc. Sufficient evidence is there to show that industrial units employ few engineers, although the scale of their operation justifies more and they stint any reasonable expenditure on employing qualified technical personnel. This is one of the main reason for our low industrial productivity.

(ii) The State Government can act as an effective inducer of employment. Perhaps the biggest expenditure item on the State Government's budget is the cost of engineering construction. It has been the traditional custom to give these works on contract. It has recently been the practice to insist upon a minimum engineering competency before deciding upon the contraction. The contractors normally get the works done cheaply by employing unqualified people. The Government could insist upon a suitable ratio between the number of engineering personnel employed by a contractor and the size of the work concerned. It will be still better if the State Government encourage unemployed qualified engineers themselves to become Government contractors for engineering works either individually for small sized works or on cooperative basis for a big-sized work. The initiative should come from Government side and all concessions about tenders, deposits, advances etc. should be given to attract more engineers for contractual jobs. Still better results will accrue if public works departments of the Government take up more and more engineering works departmentally instead of getting the works done through contractors. This will lead to more employment opportunities and also improve the quality of work.

(iii) Planning units for engineering designs and projects reports may be created by all State governments, where these are not in existence and expanded in those places where these are in existence. These units should undertake in large number advance surveys and investigations of engineering and construction projects and preparation of project reports. Survey and investigation of a number of irrigation and multipurpose projects for new alternative irrigation, hydro-electric and multipurpose projects for the formulation of plans can create large number of employment opportunities. Similarly if an advance action on a massive programme of inter-state 'River Grid' is undertaken, large number of engineers and technically qualified persons can be absorbed. Survey and investigation of thermal generation projects to prepare and advance project report so, urgently required to meet the growing power demand, can create enough employment opportunities for the present stock of technically qualified unemployed. The present proposal of a nation wide survey of natural resources like ground-water, minerals, forests, marine, wealth etc., should be implemented to provide large scale employment to the educated unemployed particularly technical personnel.

(iv) More research and development institutions should be set up which will, apart from generating job opportunities also help in exploring new areas of industrialisation and development of natural and human resources.

(v) Massive programme of construction in rural areas, including housing, roads, markets, godowns etc. and an equally massive programme of housing in the urban and metropolitan areas can generate considerable employment. Without detailed studies it may be difficult to assess precisely the physical terms of the programme. That has to be left to the local authorities to decide and design but considering the decennial population growth rate of 25 per cent between 1961 and 1971 or an annual average rate of increase of 3 per cent in case of urban and 2 per cent rural population, there seems to be a case for the constructing 15 per cent more houses in urban areas, besides clearing slums. In rural areas also there is a need of 12 per cent more housing accommodation. In case of rural areas the construction cost may have to be subsidised but that will be worth as a part of social welfare scheme because it will generate enough employment opportunities. Similarly with a plan target of increasing agriculture production of about 5% per annum over the next decade, there will be need for increasing the existing capacity of the market yards and godowns. The storage capacity would have to be developed to provide space for buffer stocks. Similarly, the need to link villages with market ,towns through rapid development of rural roads cannot be over-emphasised in a country like India from the view point of not only both the planned and potential increases in agriculture production but also on an all-round rapid growth of the rural economy which shelters three-fourth of the country's population. All these activities can generate direct employment opportunities, even for preliminary surveys and planning, for architects, engineers and technicians.

(vi) The present surpluses of educated personnel in the country is due to the slow growth rate of the economy and the inability of the organised sector of the economy to absorb the out-turn of the educational institutions. There is, therefore, a need to tap the unorganised sector of the economy, where there is a great scope because of the Green

Revolution. A suitable training and orientation programme may be drawn up under which local talent may be geared to the expanding activities and needs of the rural areas with a view to provide self-employment to the educated unemployed in the regions. A group of persons consisting of highly trained, medium trained and semi-skilled may be formed to produce with local raw material goods and services which may be consumed locally and or for marketable purposes to adjoining areas. With the introduction of new techniques in agriculture, the scope of opening new labour-intensive industries and repair and maintenance of workshops for the production and repair of agriculture implements, pumps and pump sets, has widened and organised efforts may be made, preferably at Government level or cooperative level with the back of Government authorities to open these new avenues. With all-round developments in rural areas, there is a scope for opening shops for more sophisticated consumption goods like electric appliances, radios, transistors, stoves, furniture, cycles, scooters and host of other house-hold articles. Technicians of the local areas may be encouraged to open repair and maintenance workshops for daily used articles. Besides some consumer cooperative stores may be opened in rural areas which should provide to farmers near their home all articles of their daily use including seeds and fertilisers. These activities besides opening large avenues of self employment of educated unemployed, will ensure the effective mobilisation of resources in rural areas and help further development of rural areas and raise the standard of living of the rural folks.

(vii) The general complaint of the professional employer is that they are not getting right type of workers. The products of our technical institutions have no practical experience of the jobs for which they are wanted. It has, often, therefore, been emphasised that suitable training programmes may be drawn up for providing orientation training to the unemployed technical personnel to make them employable for the specific jobs for which they are wanted. There seems to be a little exaggeration in this allegation as basically it is found that the number of jobs available falls much short of the number available to man the jobs. Further the training required varies, widely from industry to industry especially with the sophisticated machines of the modern age and so it is not possible to give such training so that they can be straightaway employed without apprenticeship or further training. The specialised training has to be imparted by the industry concerned. It is as much the responsibility of the industry as that of education to have persons adequately trained for the job. A broad based training which enables the product to adapt easily or with little effort could only be done. Unless and until therefore the number of employment opportunities is increased, training in particular field or job may lead to transference of unemployment from one sector to another. Therefore unless and until the physical targets and directions of economic growth are clearly indicated, it would be difficult to suggest any programme for training. Also for drawing up any programme for training, an agency should be set up to collect requisite data and information on continuing any systematic basis in order to identify the emerging trades and occupations having employment potential.

(viii) Some schemes of short-term training are being run by D.G.E. & T. for technical personnel. These may, however, be reviewed and rationalised in view of the changing needs of the occupational pattern. It is suggested that short-term training programmes varying between three months and six months and in some cases extending to one year's duration should be started to impart employable skills to the educated unemployed also for upgrading the skills of persons for jobs requiring higher skills. The training programme should be:

(i) tailored to specific industrial job requirements;
(ii) up-to-date with advancing technology;
(iii) flexible in response to changing manpower needs;
(iv) more oriented towards local industries;
(v) that curriculum offered should be fluid and sensitive to every changing need.

Each state should select courses according to local needs. Training can be arranged in existing industrial training institutes, junior technical schools, polytechnics, small industries service institutes and local industries.

Training programmes relating to areas mentioned below can be started to help the rural youth in getting employment—

(a) *Agriculture*—farm mechanic repairman etc.

(b) *Irrigation*—pump operator, pump mechanic, pipe fitter, sheet metal worker etc.

(c) *Industry & Craft*—chargeman, foreman, electrician, wireman.

(d) *Transport & Shipping*—truck driver, motor driver, automobile engineer, car mechanic, marine training etc.

(e) *Construction*—building road, cement, mason mistries, carpenter, blacksmith, etc.

(f) *Health occupation*—dental assistant, nursing, medical office assistant etc.

(g) *Distributive occupations and tertiary services*—food service management, departmental stores management, salesmanship, hotel catering, typing and stenography, draughtsmanship, telephone operation, accountancy, business organisation and management etc.

(ix) The State Government should patronise and encourage self-employment of engineers and technicians. The Ministry of Industry at Centre had formulated a model scheme of providing financial assistance for opening small industries as a part of the crash programme for educated unemployed. The scheme has been accepted by quite a number of States and it is being implemented in different forms in different States. A review of these schemes in details, it is hoped, will be made by the concerned Working Group on Industries but this Working Group noted the significant schemes in this regard that are in one form or the other being implemented in Kerala and Gujarat States which it recommends for adoption in other States. In Kerala engineers and technicians have formed into a cooperative society with a view to start industrial enterprises. The notable unit that this society is running is a scooter manufacturing unit. 5,000 engineering graduates, 3,500 diploma holders and about 2,500 I.T.I. certificate holders are now members of the society. The State Government is contributing capital to the Society in the ratio 1:1 they have promised to contribute more and the balance is proposed to be raised from institutional financing agencies. A share capital of Rs. 6 laks has been fully paid up. For solving the major solution of unemployment problem, 27 rural workshops all over the State, 10 at district level and 17 at primary level have been opened. The Worker's Management Council which has been formed from members of the society is managing the units. The purpose is first to cater to the needs of the agro-based industries, secondly those of the machines and lastly of the ancillary industries.

Similarly in Gujarat, the State Government is implementing a scheme under which unemployed engineers/technicians can get loans on personal security from the State Government on easy terms. They can also obtain fixed assets like land, building, power, road, godown from the Gujarat Industrial Development Corporation and machinery and equipment on hire-purchase basis from the Gujarat Small Industries Corporation. A Technician's scheme of the Gujarat Industrial Corporation offers assistance to any person who may be a qualified engineer or a technician with or without experience and who is competent to own and manage a factory. The entrepreneur receiving assistance under this scheme would be expected to employ one or more fresh engineers/technicians The Gujarat Industrial Investment Corporation in collaboration with the Gujarat Industrial Development Corporation has evolved a scheme for constructing a large number of rural workshops and service centres throughout Gujarat which can be leased out to technicians for repairs and maintenance of tractors, agriculture implements oil engins and pumps, drilling equipment, automobiles and cycle etc.

Other States have also adopted certain schemes of giving concession to entrepreneur engineers for establishing small enterprises but it has been reported that not much headway has been made in the scheme of self employment of engineers. There are many handicaps from which the Scheme is suffering. The notable among these is the lack of entrepreneurship among the engineers and diploma holders, most of whom come from middle class families and do not have experience of business. Normally, the capabilities required to run business are slightly different from the abilities required for being a technician or an engineer. Though the technical institutions impart training in polytechnics and engineering colleges in civil/electrical/mechanical technology, so that the candidate is able to execute an engineering work after gaining sufficient experience in the line, the course contents do not include those skills which require a man to be a successful businessman. Therefore, in order to make these diploma holders and degree holders, self employable. certain special assistance will have to be given by various state government departments such as those of industries, commerce, technical education, agriculture. PWD etc. The assistance which may be required may be of one or more of the following types:

(i) Financial assistance. Schemes of loans from nationalised banks have not helped much in this direction. The Government or some finance corporation should set up a machinery to give loans on easy and acceptable terms.

(ii) Information on market conditions.

(iii) Supply of technical literature/working drawings.

(iv) Common facility workshop—where facilities may be available for various manufacturing processes on hourly rates to these degree and diploma holders for production work.

(v) Supply of raw materials.

(vi) Work orders from government departments and other organisations.

(vii) Sales facilities/assistance for products manufactured by these degree/diploma holders.

32. As regards the long-term measures, it is observed that there has been a criticism of the present system of education for its having too much academic and literary bias and encouraging note learning and passive receptivity. The traditional concept of education has been the imparting of knowledge and culture to turn out its products as better and knowledgeable citizens. In the present day world of science based technology, the role of education has undergone a change. A link between education and productivity has to be established. The Education Commission (1964—66) has already recommended a programme of science education, work experience and vocationalisation for forging the desired link of education with economic development. This, however, needs further examination and

analysis from the point of view of its adoption by the educational authorities. Nevertheless, this group is of the view that although education as such can do little in creating employment opportunities outside education sector, it does stimulate generation of employment through the development processes to which it makes a significant contribution and through the development of human resources which facilitate the adoption of advanced technologies, production of newer types of goods and services and through increasing the demand for consumer goods. For this, the present educational system should be revamped so as to make education job-oriented with a technical bias right from the elementary stage of education in order to improve the employability of its products. In order to change the attitude of the products of educational institutions in the matter of seeking white-collar jobs, particularly, those receiving general education, it is desirable to stress the idea of introducing work-experience in general education at all the stages of education in one form or the other. The idea is to relate education to productivity and to integrate thinking and doing. The work-experience should be able to change the attitude of the students towards manual labour, should develop in the students an ability to apply their mind to productivity. etc. Some long-term measures are suggested in subsequent paragraphs for building up some links of education with economic development or employment generation as far as possible.

33. In the field of elementary education, as already suggested, every effort should be made to expand schooling facilities for the children of the age-group 6—14. This programme besides creating large quantum of direct employment opportunities will help in achieving the constitutional goal of universal elementary education. But apart from the problem of expansion of elementary education, the problem lies in the qualitative improvements at this stage of education from the point of view of the employability of its products. At present elementary education, besides being purely academic, is suffering from wastage and stagnation of the worst type. Out of 100 pupils entering Class I, only 60 reach Class V and 25 reach Class VIII, which is generally the termination point of the elementary stage of education. Majority of its products, both who have completed the elementary stage of education or drop in the mid stream, join the labour force and generally their parental occupation. But as the education received by them has not equipped them for the life, they either add to the huge quantum of underemployed in rural areas or migrate to towns as unemployed. What is therefore required in the elementary stage is to improve its quality and orientate its curriculum and methodology of teaching so as to inculcate in the child from the very beginning those basis attitudes, skills and personality traits which are prerequisites for employment preparation, employment adaptation and employment creation. These are industry, respect for manual work and habit of cooperation and team work, initiative, resourcefulness, an enquiring mind and an adventurous spirit and power of observation etc. If the products of elementary education are equipped with these basis skills and traits, they can enter economic life safely to affect improvement in their parental occupations, if they join those or enter subsidiary occupations and thus turn the under-employment into fuller employment.

The Education Commission has recommended the introduction of work-experience with strong scientific bias as an integral part of general education at elementary and secondary stages of education. Work-experience as defined by the Education Commission is "participation in productive work in the schools, in the home, in a workshop, on a farm, in a factory or in any other productive situation." In other words, work-experience develops systematic thinking so as to promote knowledge, skills or attitude relevant to orientation for self employment or for vocational education. It, in short, introduces the child to the world of work and provides much needed corrective to the extremely academic and bookish character of present education and acquaints the students with science-based technology. The work-experience to students may within the schools or outside the schools and an appropriate organisation will have to be found to impart this type of education to those outside schools. There are a variety of media through which work-experience can be given such as kitchen gardening, agriculture, paper-work, clay-work, wood-work, metal work, tailoring work and needle work, electrical gadgets, household appliances, spinning and weaving etc.

33. This Group recommends the adoption of work-experience as a part of general education at the upper primary and lower secondary stages of education. In fact some of the States like Maharashtra have already started implementing this programme but other States may also be requested to adopt this programme. Of Course the task of the implementation of this programme in terms of training of teachers, provision of equipment and organisational set up is formidable, but if the standards of education are to be raised and education is to be related to productivity, the programme is inescapable. At the most, it can be introduced by stages in different areas according to administrative and financial feasibilities. But due priority should be given to this programme of corrective measure.

34. At the secondary stage of education, this Group recommends vocationalisation of education besides the adoption of the programme of work-experience in general education upto the lower secondary stage which should normally terminate at the end of the 10th class. Vocationalisation of education would involve the introduction of educational activities which prepare an individual for a vocation in future life. The courses of vocational education should be such that at the end of the course, the product should in general ready to fulfil certain requirements of industrial and agricultural occupations. There may be other areas where an individual can be employed in gainful occupations such as stenography, salesmanship, marketing, accounting, banking, etc. Among the areas of self-employment activities occupations such as manufacture of agricultural tools, small electric appliances, repair of mechanical appliances, repair of radios, servicing the automobiles, manufacture of furniture, weaving, printing, book-binding, plastic goods, electronic etc., can be identified.

This programme should be progressively introduced at the secondary stage after the 10th class so as to achieve the Education Commission's target of diverting 50 per cent students to vocational education within a period of 10 years. In order to remove the general social bias against this type of education and to make it more attractive, large number of scholarships and other facilities should be provided to students taking vocational education, besides intensifying the programmes of vocational guidance, career information and educative propaganda etc.

Any programme of vocationalisation would need to bear in mind the manpower needs of the country for which the Education Commission has suggested the creation of special units in the education departments of the states. These units should be charged with the overall courses of this nature and in organising such programmes, they should bear in mind the manpower needs and work in close collaboration with the machinery for vocational guidance, training centres in industry and employers. In determining the requirements of various categories of personnel, local field surveys and studies of employment situation should be carried out periodically in close collaboration with the employing agencies.

35. In the field of higher education, the general criticism is that there has been an unplanned expansion of education at this level. The enrolment at this stage of education has shown faster rate of increase than at primary and secondary stages of education. According to the available information up to 1965-66, it is observed that whereas primary and secondary education has increased from 1950-51 to 1955-56 by 33.3 and 34.7 per cent respectively, the enrolment of graduates has increased by more than 65 per cent during the same period. In the next five years, as against 40.1 per cent and 72.9 per cent increase in primary and secondary education respectively, enrolment of graduates and above increased by more than 95 per cent. Similarly, in the last 5 years ending in 1966 the number of students in graduate classes increased by more than 101 per cent, as against an increase of 45.6 per cent in the primary classes and 77.9 per cent in the secondary classes. This top-heavy, lop-sided development of educational structure has defeated the objective of education to be purposeful, productive and employment-oriented.

Restrictive admission has been suggested as a corrective measure for curbing the rush for higher education. But in a democratic country like ours, it is extremely difficult to control entry to the higher education. The entry can be controlled only by limiting facilities in a particular field of studies and regulating admission on merit. However, it is extremely difficult in the present set up to resist pressures to expand facilities for the course of study which has popular demand at a particular time. It is only the employment opportunities which can shift the demand from one field of study to another. Further, the ever increasing rush towards universities for higher education is not a reflection of students lust for scholastic or cultural sophistication. In fact, in great many cases, it indicates a push from the employment market. To that extent students going in for higher education are actually unemployed in disguise. Moreover, in the existing social and employment norms, a large majority of persons seek higher education to increase their chances of employability or want to take jobs requiring relatively higher skills and competence. For this set of people higher education is a means to find a suitable employment. In the circumstances unless and until employment opportunities are increased rapidly by accelerating the economic growth and the present system of insisting on decree as a pre-requisite minimum qualification for any employment is revised, very little can be done in controlling the rush to universities for higher education. Nevertheless the programme of vocationalisation, as recommended above by this Group, will put a break to the speed at which students are at present running for higher education.

36. There has been a lot of criticism about the type of technical education that is at present provided by technical institutions. It is often complained by the employing agencies particularly industries, that they are not getting the right type of persons from the technical institutions. They have to be provided with some practical training before they are fit to be put on the jobs for which they are recruited. The Group feels that there is some exaggeration in this criticism because it is not possible for a fresher, howsoever he may be trained, to do the job as required by the employer unless he is provided with some practical training of the specified job which is assigned to him. What should be required of the products of technical institutions is that they should be equipped with basic training in various aspects of technology so that they may pick up quickly the practical working of the job to which they are put. It is to be seen whether teaching and training in the present technical institutions answer to these requirements.

Industry requires craftsmen, middle level supervisory personnel, high level supervisory personnel and personnel for design and research. The craftsmen train in I.T.I. often receive general training in a particular trade and it often becomes difficult for them to get gainful employment without further specialised training to suit the particular requirements of a particular industry. It is no wonder that industry would prefer to train their own personnel as craftsmen for their specified jobs. The middle level supervisory staff consisting of foremen, oversears are generally trained in polytechnics. The feeling of the potential employers of such personnel is that the diploma course offered in polytechnics are diluted degree courses; not oriented towards any specific fields in which employment opportunities are available. Another weakness which reduces the employability of these diploma holders is inadequate practical training which alone can provide the confidence to handle an engineering job. The higher level of supervisory personnel as well as those that undertake research design or teaching generally go through a formal course of theoretical education and practical training over a period of five years after the higher secondary level. The main weakness of this scheme is that practical side does not receive as much attention as it deserves. What little practical training is given is provided during the vacations which is not also compulsory in all institutions and assessment of the trainees is not included in the overall assessment of the achievements of the students before awarding them the degree. Another weakness of the present set up is that there is no proper liaison between the teaching institutions on the one hand and the potential employers of engineering personnel such as government departments, industrial establishments, public corporations and local bodies the others. There exists no arrangement by which the industrial employers can tell the teaching institutions as to what types of technical hands they expect. Rather industries show apathy to the training programmes of the institutions and trainees are looked upon as nuisance and hinderance to their normal production. In short, no worth while training is provided to the trainees.

Some suggestions for removing the above mentioned weaknesses are: (a) the training imparted to the craftsmen must lay stress on working skill in a particular trade and it must be corelated as far as possible to the requirements of the industries located in the vicinity. For imparting specialised skill in a particular, the requirements of the industries in the area must be known in advance; (b) for the training of personnel for middle level supervisory posts, the diploma course must include some engineering fundamentals and a knowledge of labour management, but the greatest emphasis must be laid on working skill. Here also the course should be oriented towards specific industrial fields; (c) in degree courses also, great stress be laid on practical training aspects and training should be made compulsory and be a part of the curriculum with proper assessment for the same; (d) there should be a machinery through which the expectations of the employers regarding the kind of training they expect in their prospective employees and the number in each category that may be required may be communicated to the teaching establishments. For this effective association of the potential employers of engineering personnel with the formulation of courses of studies and training by boards of studies and faculties of various universities and other bodies that award certificates and diplomas in engineering subjects, is necessary. Even more important than this, the industrial establishments must take kindly to the idea of providing training facilities to students and consider them as their potential assets. Some production no doubt will be hindered, if industrial establishments provide training worth the name, but in the long run, the industry in general will more than make up for the losses thus suffered.

37. Both the Ministry of Education's Stipendary Scheme of Training and the Ministry of Labour's scheme of National Apprenticeship are extensive and important instruments of skill generation in the economy and for increasing the employability of the trainees. So far there has been no independent review of the schemes. But the general observation is that industries, where such trainees are sent, look on these schemes as an imposition and accordingly there is a certain degree of reluctant participation in the schemes, although they are the final consumers of the products of these schemes. Some concerted efforts will have to be made to promote a more receptive climate for these schemes among the employers and if necessary some legal obligations may be imposed for the effective implementation of these schemes. It is suggested that large industries who have their own training programmes should choose trainees from those selected under the scheme and should share the part of the expenditure

by way of stipends incurred on these schemes. This arrangement will make the industries more committed to the programme of training envisaged under the schemes. Some other difficulties in the working of these schemes and the corrective measures for their removal are mentioned below:

(i) Due to non-availability of living accommodation, students are obliged to forgo opportunities of training in good establishments. Every industry should, therefore, be required to put up and maintain a transient trainees hostel, the capacity being determined by the size of the industry.

(ii) In view of the operation of various wage incentive schemes in industry, the workers are reluctant to let any part of their effective working time being consumed on account of the trainees. Therefore, measures to compensate the workers for their lost time will have to be adopted, which means some financial burden on the industry. The industry or Government must, therefore, be prepared for it.

(iii) The attitude of worker's unions towards trainees, who are being trained for supervisory and management positions is full of suspicion. They have a lurking fear that technically qualified youngmen, when trained, may occupy supervisory positions, which they think they could take in due time. They are also afraid of their secrets and skills being known to those who might one day become their officers. This therefore is a matter of inspiring confidence among the workers which may become possible only if the organisation is deeply committed to the training programmes.

(iv) Each large industry should have a training centre of its own. Only then, the industry will have the confidence to take fresh engineers for being employed since they will be having training capacity. The training centre will also be in a position to look after the training needs of the students from colleges and polytechnics effectively.

38. In the end, this Working Group would like to suggest the following steps/studies be undertaken for forging the desired relationship of education with employment opportunities:

(i) The Government with the help of agencies like IAMR and DGE&T should evolve a machinery to identify on a continuing basis the requirements of technical personnel for manufacturing units by making an occupational analysis of the data on vacancies intimated to employment exchanges and also follow-up action of the legislative measures at present in force under which industries are required to intimate vacancies to employment exchanges.

(ii) Some machinery should be evolved at the Centre and State headquarters which should undertake perspective manpower estimates of selected categories of manpower on a continuous basis, which should as far as possible form the basis of educational planning.

(iii) Field surveys particularly at district level should be undertaken periodically to analyse the changes in the occupational pattern of the economy both in the organised and unorganised sectors. The resulting information should be made available to the educational authorities for giving proper guidance to the students for choosing their courses of study.

(iv) The statistical machinery charged with the collection of educational statistics, both at the Centre and in the States, should be suitably strengthened, so that the required data for manpower estimates, studies and planning may be made available with the minimum time-lag. At present, data with a time-lag of 4-5 years is available and is thus not helpful for making further studies and estimates.

39. Before concluding, we would like to express our appreciation of the valuable assistance and cooperation rendered by Shri R. K. Bhandari, S.R.O., Shri L. M. Bhatt, Senior Investigator, Sarvashri Tej Singh and Lalit Gopal Mathur, Junior Investigators and Shri G. B. Joshi, Computor along with Shri P. Lalwani, Personal Assistant who provided able secretariat and stenographic assistance. But for the hard and devoted work put in by the officers and staff of the Education Division of the Committee it would have been difficult for us to complete our work within the time limit.

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APPENDICES

APPENDIX I

STATEMENT-I—*Number of Job Seekers on the Live Registers of Employment Exchanges as on 31st December 1971—by States and Level of Education*

Serial No.	State/Union Territory	No. of job seekers on live registers as on 31st December, 1971							
		Matriculates	Higher Secondary passed including Intermediates/Undergraduates			Graduates and above			
			Total (Col. 5+6)	Diploma Holders (Technical)	General	Total (Cols. 8+9)	Engineers	Others	Total (Cols. 3+4÷7)
1	2	3	4	5	6	7	8	9	10
1.	Andhra Pradesh	1,09,842	35,482	5,757	29,725	23,983	1,981	22,002	1,69,307
2.	Assam	17,078	7,466	467	6,999	5,201	235	4,966	29,745
3.	Bihar	94,585	36,077	7,178	28,899	35,265	4,008	31,257	1,65,927
4.	Gujarat	62,718	5,967	1,710	4,257	14,070	70	14,000	82,755
5.	Haryana	28,704	10,034	566	9,468	8,051	263	7,788	46,789
6.	Himachal Pradesh	9,732	1,778	241	1,537	1,880	91	1,789	13,390
7.	Jammu & Kashmir	4,271	2,836	202	2,634	2,494	242	2,252	9,601
8.	Kerala	1,66,899	10,015	3,937	6,078	24,266	2,066	22,200	2,01,180
9.	Madhya Pradesh	22,756	92,535	2,628	89,907	21,915	621	21,294	1,37,206

APPENDIX I—contd.

1	2	3	4	5	6	7	8	9	10
10. Maharashtra	... ...	1,51,922	26,868	1,991	24,877	20,524	1,058	19,466	1,99, 314
11. Mysore	... ...	1,03,765	14,827	6,351	8,476	21,273	2,450	18,823	1,39,86
12. Orissa	... ...	42,140	5,405	1,726	3,679	9,250	661	8,589	56,795
13. Punjab	... ...	28,933	15,313	710	14,603	11,986	152	11,834	61,232
14. Rajasthan	... ...	28,704	23,789	1,006	22,783	12,179	424	11,755	64,672
15. Tamil Nadu	... ...	1,52,162	13,999	4,531	9,468	25,434	1,560	23,874	1,91,595
16. Uttar Pradesh	... ...	1,03,547	87,411	4,546	82,865	40,753	432	40,321	2,31,711
17. West Bengal	... ...	1,08,505	1,79,827	8,454	1,71,373	80,313	1,512	78,806	3,68,650
18. Chandigarh	... ...	3,315	1,164	165	999	1,416	..	1,416	5,895
19. Delhi	... ...	28,511	22,319	2,309	20,010	25,752	1,089	24,663	76,582
20. Goa	... ...	5,126	559	75	484	614	21	593	6,299
21. Laccadives	... ...	287	23	18	5	45	4	41	355
22. Manipur	... ...	9,164	4,384	..	4,284	4,368	8	4,360	17,916
23. Pondicherry	... ...	1,292	1,544	159	1,385	882	47	835	3,718
24. Tripura	... ...	7,843	5,600	280	5,320	1,622	55	1,567	15,065
ALL INDIA TOTAL	...	12,96,801	6,05,222	55,007	5,50,215	3,93,541	19,050	3,74,491	22,95,564

SOURCE—D.G.E. & T.

APPENDIX II

Extracts from the Report of the Education Commission (1964—66)—paras 5.14 to 5.25.

A FORECAST OF MANPOWER NEEDS

5.14. *The ISI-LSE Estimates*— We have recommended that educational facilities at the post primary stage should be broadly related to manpower needs. Our task now is to forecast these needs and study their educational implications. In this, we have been fortunate in having two estimates prepared for us: one, a series of elaborate investigations carried out by the Institute of Applied Manpower Research; and the other, a part of a longer study undertaken by the Planning Unit of the Indian Statistical Institute, New Delhi, and the Unit for Economic and Statistical Studies on Higher Education, London School of Economics, in collaboration with the Perspective Planning Division of the Planning Commission. In broad orders of megnitude, the results of the two estimates are similar; and the differences between them can generally be explained by the different assumptions used. For the main presentation of this chapter, we adopt the ISI-LSE estimates as they are more detailed, offer estimates up to 1986 and assume a higher target of economic growth. We believe that the risk involved in over-estimation is comparatively less than in under-estimation and that it is less harmful to have some surplus trained personnel on hand for some time rather than help up the progress of agriculture or industry for lack of such personnel. At any rate, precise figures are less important than broad directions of policy. On this, both estimates largely agree.

5.15. *Manpower* (1961)—We must first explain briefly the manner in which these estimates have been made. The starting point in the preparation of these estimates is provided by the country's stock of educated manpower in 1961 (derived from the 1961 census and a special tabulation of the National Sample Survey, 16th round), expressed in terms of workers with matriculates, intermediate and degree qualifications. This is shown in Table 5.1.

5.16. Broadly there were 5.2 million workers with qualifications equivalent to matriculation and above, two-thirds of them in towns and the rest in rural areas. Over half of these were employed in "other" services (public administration, education and so on). About one in five of them (1.1 million) were also graduates, and these were even more heavily concentrated in the service occupations. Only some were in manufacturing industries.

5.17. *Future requirements of Educated Manpower*—The question we must ask is how these numbers may be required to grow in the future. How many matriculate and graduate workers should there be in 1976 and 1986? Two broad methods have been used to answer these questions, one for services, in which many educated people are employed, and one for the other sectors of the economy.

TABLE 5.1: *Matriculates, Intermediates, Graduates and Total Workers, by Industry: India* (1961)

Industry group	Below Matric	Matriculates	Intermediates	Graduates	Total workers
1. Agriculture	130,648	381	46	67	131,142
2. Mining, etc.	5,143	68	5	6	5,222
3. Manufacturing	19,377	436	89	104	20,006
4. Construction	1,911	99	30	19	2,059
5. Trade and Commerce ..	7,009	452	101	92	7,654
6. Transport and Communications ..	2,528	318	80	93	3,019
7. Services (Other)	16,895	1,500	405	765	19,574
Public Services	3,711	722	245	296	4,974
Educational Services	1,584	467	103	289	2,443
Medical and Health Services ..	765	124	27	48	964
Religious and Welfare Services ..	1,082	38	6	26	1,152
Legal Services	119	39	1	60	219
Business, trade labour association and community services ..	191	37	6	7	241
Recreation, personal and other services	9,443	81	18	37	9,579
TOTAL ..	183,511	3,262	756	1,147	188,676
			(Percentage)		
1. Agriculture	99·6	0·3	..	0·1	100·0
2. Mining, etc.	98·5	1·3	0·1	0·1	100·0
3. Manufacturing	96·9	2·2	0·4	0·5	100·0
4. Construction	92·8	4·8	1·5	0·9	100·0
5. Trade and Commerce	91·6	5·9	1·3	1·2	100·0
6. Transport and Communications ..	83·7	10·5	2·7	3·1	100·0
7. Services (Other)	86·3	7·7	2·1	3·9	100·0
TOTAL ..	97·3	1·7	0·4	0·6	100·0

SOURCE—ISI/LSE Paper.

5.18. To take the latter first, it has been assumed that, as yet output in each sector and in each branch of manufacturing industries increases, so proportionately will be the employment of educated manpower. The targets for economic growth assumed in these estimates, for the economy as a whole and for each sector, are those proposed by the Perspective Planning Division of the Planning Commission. The overall growth targets are 6.6 per cent a year from 1961 to 1976 and 7.0 per cent for the whole period of 1961 to 1986. Within these overall targets, sectoral targets naturally vary from 11.85 per cent (factory establishments including power supply) and 11.24 per cent (construction) to 3.86 per cent (agriculture) in the period 1961—76. Projecting the growth of output in each separately allows for shifts in patterns of employment and reveals demands for educated workers in fast-growing highly technical industries which would be lost in a simple overall growth rate.

5.19. Within services, each major service has been treated separately. In 1961, a quarter of employed matriculates and a similiar proportion of employed graduates were in public administration and defence. It is assumed that these will increase at four per cent a year. The need for teachers is derived from enrolment estimates and assumptions about pupil-teacher ratios and teachers' qualifications. The need for medical personnel distinguishes doctors, nurses and auxiliary personnel. The targets chosen imply one doctor per 3,000 population in 1975-76 and one per 2,000 in 1985-86, and similar numbers of fully trained nurses. The estimates for both educational and medical personnel take direct account of population growth and national income. Of the remaining services, legal and business services may grow as fast as the economy as a whole; recreational and personal services, perhaps less fast. For the combined remaining services, a growth of 3 per cent a year has been assumed upto 1976 and of 5 per cent thereafter.

5.20. The results of these various calculations show that matriculate workers should increase from 5.2 million in 1961 to 16.6 million in 1976 and 32.6 million in 1986. Graduate workers should increase from 1.1 million in 1961 to 3.3 million in 1976 and 6.5 million in 1986. This and other relevant details will be seen from Table 5.2.

5.21. *Workers, Stock and Output of Educated Manpower*—So far, these projections have been in terms of numbers of workers. But not all educated people work. Some remain students, some are housewives and some remain unemployed. Broadly speaking, it has been assumed that the proportion of educated men and women who are at work will remain in the same as it was in 1961. On this basis, the stocks of workers (as well as the out-turn in each category) were worked out and are given in *Table* 5.3. It will be seen from it that the total number of those with matriculation and above grows from 8 million in 1961 to 27 million in 1976 and 56 million in 1986 (or at the rate of 8.3 per cent a year upto 1976 and 7.5 per cent in the following decade). The total number of graduates shown grows from 1.5 million in 1961 to 4.5 million in 1976 and 9 million in 1986 (or at a steady growth rate of 7.5 per cent a year, compared with 6 per cent throughout the 1950s).

5.22. In general, the output from the educational system needed to produce this pattern of stocks should grow at the same rate as the required stock. The exception is the output of matriculates upto 1976, which grows rather faster than the required stock as the actual output in 1961 was below that required if stock targets were to be met. Overall, the annual output of matriculates should grow from 0.6 million in 1961 to 4.8 million in 1986 and that of graduates from 0.1 million to nearly 0.6 million. The percentage of each age-group who are matriculates, should rise from 7 per cent to 27 per cent and those who are graduates from 1.5 per cent to nearly 5 per cent.

5.23. On the other hand, the proportion of those completing class VII who go on to be matriculates and graduates must fall. This is because of the very substantial expansion of numbers in class VII as the

TABLE 5.2: *Estimated Requirement of Matriculates and above, by Industry Group: India* (1960-61 to 1985-86)

Industry Group	1960-61 (Actual)			1975-76			1985-86		
	Matriculate	Intermediate	Graduate	Matriculate	Intermediate	Graduate	Matriculate	Intermediate	Graduate
1	2	3	4	5	6	7	8	9	10
1. Agriculture	381	46	67	681	83	120	984	120	174
2. Mining	67	5	6	282	20	27	632	45	61
3. Manufacturing	436	90	102	2,880	584	707	6,681	1,355	1,642
4. Construction	99	30	19	503	150	97	1,131	337	218
5. Trade & Commerce	452	100	92	1,181	262	240	2,565	570	522
6. Transport and Communications ...	318	80	94	1,200	301	354	2,608	654	769
7. Services (Others)	1,509	484	765	4,147	1,040	1,754	6,677	1,653	3,156
Public services	723	245	296	1,299	441	533	1,923	522	789
Educational services	467	102	290	2,123	463	877	3,041	668	1,728
Medical & Health services	124	27	47	379	82	175	1,139	248	360
Other services	195	30	132	357	54	169	574	85	279
TOTAL	3,262	755	1,146	10,874	2,440	3,299	21,278	4,734	6,542

SOURCE—ISI/LSE Paper.

TABLE 5.3: *Estimates of Required Workers, Stock and out-turn of Matriculates and above: India* (1960-61 to 1985-86)

	Thousands			Annual-Growth Rate		
	1961	1976	1986	1961—76	1976—86	1961—86
Matriculates and above						
Workers	5,164	16,612	32,554	8·1	7·0	7·7
Total Stock ..	8,227	27,339	56,223	8·3	7·5	8·0
Out-turn of matriculates	623 (6·8)	2,324 (16·4)	4,779 (27·4)	9·2	7·5	8·5
Intermediates and above						
Workers	1,901	5,739	11,275	7·6	7·0	7·4
Total stock	2,755	8,515	17,464	7·8	7·6	7·6
Out-turn of Intermediates	240 (2·8)	749 (5·6)	1,537 (9·1)	7·9	7·5	7·7
Graduates and above						
Workers	1,146	3,299	6,543	7·4	7·1	7·2
Total stock . ..	1,510	4,433	9,082	7·5	7·4	7·5
Out-turn of graduates	123 (1·5)	377 (3·2)	772 (4·9)	7·7	7·5	7·6

SOURCE—ISI/LSE Paper.

N.B.—Figures in parentheses indicate percentages of the population in the corresponding age-groups.

Constitutional Directive on free and compulsory education is implemented. If the transition proportions (that is, those matriculating and graduating as a percentage of those in class VII) remain fixed even when all children complete class VII the stocks of educated manpower would be well in excess of manpower needs. This would become especially serious from mid-1970s onwards: by 1986 there would be 4 million 'too many' matriculates and 1.5 million 'too many' graduates.

5.24. In addition to these estimates for workers with broad educational levels, separate estimates have been made for engineers and agricultural graduates. These will be discussed elsewhere.[41] When graduates in engineering and agriculture are taken with those in medicine and teaching and related to the total stock of graduates, they form an increasing proportion—33 per cent in 1916, 43 per cent in 1976 and 46 per cent in 1986. Comparable changes are required at lower levels.

5.25. *Enrolments*—The final stage in the calculation is to say that enrolments are implied by the out-turns required. This has been done on the basis of these observed relationships between enrolments and out-turns in 1960-61, allowance being made for our recommendations on the pattern of education, length of courses, wastages, etc. The net result is given in *Table* 5.4.

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[41] Vol. II Chapters XII, XIV and XV.

TABLE 5.4: *Enrolments Proposed* (1960-61 to 1985-86)

(thousands)

	1960-61		1975-76		1985-86	
	Enrolments	Passes	Enrolments	Passes	Enrolments	Passes
Matriculation level						
General: Classes VIII/IX, IX/X, X/XI ..	3,582	585	12,324	2,324	23,630	4,779
Vocational (School) [1, 2]	119	48	361	135	738	278
Total Matriculates ..	3,701	633	12,685	2,459	24,368	5,057
Intermediate level						
General: Years I and II degree course[5]	597	208	..	..	..	..
College (professional) ..	80	85	..	..	..	..
TOTAL COLLEGE ..	677	243	2,176	749	4,460	1,537
School (vocational)						
Engineering Diploma ..	46	10	297	67	573	139
Others	181	42	701	151	1,438	310
Teacher Training [1, 4] (all non-graduate) ..	123	75	453	211	402	169
TOTAL SCHOOL[1] ..	350	127	1,451	429	2,413	618
TOTAL INTERMEDIATE ..	1,072	370	3,627	1,178	6,873	2,155
Under-graduate level						
First degree: Years I, II, III and IV ..	822	96	..	..	..	..
Professional[3]	174	30	..	..	..	..
TOTAL ..	996	126	3,038	377	6,216	772
TOTAL (ENROLMENTS IN YEARS III, IV ONLY)[6]	320	126	972	377	2,985	772

SOURCE—ISI/LSE Paper.

NOTES

[1]. Not represented in the manpower data.

[2]. Including some teacher training, 1960-61 only.

[3]. First degree only (excluding degree in teaching and law).

[4]. Excluding courses at matriculate level in 1960-61.

[5]. Enrolment in Classes XI and/or XII and intermediate and equivalent classes.

[6]. In 1985-86 the enrolment figure is based upon three-year course and thus represents enrolments in years III, IV and V.

APPENDIX III

Statement-I—Educational Facilities for the Children of the Age Group 6—11 (1970-71—1978-79).

(Figures in 000')

State/Union Territories	Enrolment in classes I—V, 1970-71 (Actual)*	Percentage of enrolment in classes I—V to total population in the age-group 6—11 in 1970-71 (Actual)§	Enrolment in classes I—V in 1972-73 (Likely)*	Percentage of enrolment in classes I—V to total population in the age-group 6—11 in 1972-73 (Likely)§	Target of estimated enrolment necessary in classes I—V in 1978-79 to cover 100% population of the age-group 6—11§
1	2	3	4	5	6
A. States					
1. Nagaland	70	118·0	71	115·2	67
2. Kerala	3,319	116·5	3,479	116·2	3,328
3. Tamil Nadu ..	5,145	107·9	5,445	111·8	5,124
4. Manipur	180	106·7	188	102·6	226
5. Meghalaya† ..	141	97·9	147	98·0	167
6. Maharashtra ..	6,099	89·1	6,106	85·1	7,935
7. Uttar Pradesh ..	10,828	87·5	11,541	90·0	14,057
8. Gujarat	3,218	84·1	3,458	85·3	4,562
9. Mysore	3,357	82·8	3,535	84·2	4,846
10. Himachal Pradesh ..	394	78·8	439	82·1	605
11. Jammu & Kashmir	405	76·6	462	84·1	578
12. West Bengal ..	4,781	74·5	5,161	76·5	7,626
13. Tripura	168	73·4	187	77·3	278
14. Assam†	1,536	70·3	1,768	76·2	2,699
15. Andhra Pradesh ..	3,938	69·8	4,421	75·5	6,368
16. Punjab	1.431	66·0	1,553@	66·6	2,684
17. Orissa	1,849	64·0	2,330	77·1	3,328
18. Bihar	5,009	62·2	5,619	67·0	9,342
19. Haryana ..	890	60·2	1,062	68·8	1,829
20. Rajasthan ..	2,205	58·1	2,395	60·0	4,476
21. Madhya Pradesh ..	3,206	55·7	3,856	64·9	6,534
B. Union Territories					
1. Goa, Daman & Diu	121·6	138·8	129·3	145·2	91
2. L. M. & A. Islands..	5·4	138·5	5·6	136·6	4
3. Chandigarh ..	26·6	114·2	30·8	122·5	29
4. Pondicherry ..	60·8	113·7	64·0	116·6	59
5. Dadra & Nagar Haveli	11·5	111·0	11·7	108·2	12
6. A. & N. Islands ..	12·1	105·9	14·9	119·8	15
7. Delhi	468·3	81·1	525·3	81·3	819
8. Arunachal Pradesh..	18·3	33·7	26·8	44·8	61
All India ..	58,893	78·0	64,031	81·5	87,749

SOURCE:

*Planning Commission.

†Population of the age-group 6—11 estimated on the basis of 1971 Census in respect of these States.

@Estimated.

§Report of Population Projection Commitee.

APPENDIX III—*contd.*

Statement-II—Educational Facilities for the Children of the Age-Group 11—14 (1970-71—1978-79).

(Figures in 000's)

State/Union Territories	Enrolment in classes VI—VIII in 1970-71 (Actual)*	Percentage of enrolment in classes VI—VIII to total population in the age-group 11—14 in 1970-71 (Actual)§	Enrolment in classes VI—VIII in 1972-73 (Likely)*	Percentage of enrolment in classes VI—VIII to total population in age-group 11—14 in 1972-73 (Likely)§	Total estimated enrolment necessary in classes VI—VIII in 1978-79 to cover 75% of the population of the age group 11—14§
1	2	3	4	5	6
A. States					
1. Kerala	1,061	70·4	1,103	68·7	1,403
2. Nagaland	19	59·7	21	61·9	29
3. Himachal Pradesh ..	129	52·2	151	55·3	250
4. Tamil Nadu ..	1,299	47·8	1,302	47·0	2,226
5. Haryana ..	337	46·0	374	46·0	756
6. Punjab	470	43·7	520@	43·6	1,109
7. Jammu & Kashmir..	116	43·3	127	44·3	245
8. Maharashtra ..	1,537	43·2	1,604	41·9	3,354
9. Manipur	35	41·3	39	41·8	90
10. Meghalaya† ..	31	40·8	36	45·5	68
11. Gujarat	794	40·5	890	41·9	1,901
12. Tripura	43	39·0	55	46·4	107
13. West Bengal ..	1,135	34·0	1,269	35·6	3,153
14. Mysore	686	31·3	760	33·3	1,939
15. Assam†	334	29·1	390	31·9	1,088
16. Uttar Pradesh ..	1,866	27·9	2,019	28·9	5,919
17. Rajasthan	518	26·2	606	28·6	1,868
18. Bihar	965	21·9	1,137	24·8	3,889
19. Madhya Pradesh ..	689	21·8	819	25·0	2,738
20. Andhra Pradesh ..	534	17·7	649	20·5	2,702
21. Orissa	252	16·5	595	36·7	1,496
B. Union Territories					
1. Goa, Daman & Diu	34·4	73·2	36·7	75·5	39·1
2. Delhi	212·1	72·9	242·1	72·0	344·0
3. A. & N. Islands ..	3·9	68·3	5·1	80·3	6·1
4. L. M. & A. Islands..	1·2	60·0	1·3	62·5	1·7
5. Pondicherry ..	16·6	57·2	19·0	63·8	24·4
6. Chandigarh ..	4·8	41·7	6·3	49·6	12·0
7. Dadra & Nagar Haveli	0·9	18·4	0·8	15·1	4·5
8. Arunachal Pradesh..	3·0	10·2	3·5	11·3	26·0
ALL INDIA ..	13,124	32·4	14,778	34·7	36,788

SOURCE—

*Planning Commission.

§Report of Population Projection Committee.

†Population of the age-group 11—14 estimated on the basis of 1971 Census in respect of these Stats.

@Estimated.

APPENDIX IV

Modus-Operandi of the Programme of Expansion of Elementary Education

The proposed programme of expansion of elementary education envisages 100 per cent target of enrolment for the children of the age-group 6—11 and 75 per cent target of the enrolment for the children of the age-group 11—14 by the end of 1978-79. This would involve an additional enrolment of nearly 240 lakh children of the age-group 6—11 and 216 lakh children of the age-group 11—14 (90 lakhs in regular classes and 126 lakhs in part-time classes) upto the end of the Fifth Plan.

2. Statement-I at Appendix III shows statewise, according to the ranking in respect of the achievement, the present position of the enrolment and the target proposed for the age-group 6—11. By the end of 1972-73, the enrolment in classes I—V will be about 640 lakhs or nearly 80 per cent of the population of the age-group 6—11 for the country as a whole. By the end of the Fifth Plan i.e. 1978-79, this enrolment will have to be increased to at least 877 lakhs in order to achieve the proposed target of 100 per cent enrolment of this age-group. This would involve an annual additional enrolment of nearly 40 lakh children of this age-group as against the present average increases of 25 lakhs.

3. Statement II at Appendix III shows statewise and according to the ranking in respect of achievement in 1970-71, the likely enrolment in classes VI—VIII by the end of 1972-73 and the additional enrolment required by 1978-79 in order to achieve proposed target of 75 per cent enrolment of the age-group 11—14. By the end of 1972-73, the enrolment in classes VI—VIII is likely to be of the order of 148 lakhs or 40 per cent of the population of the age-group 11—14. This will have to be increased to about 368 lakhs by 1978-79 in order to achieve the proposed target of 75% of this age-group. This will involve an additional enrolment of nearly 36 lakh children of this age-group every year as against the present average annual increase of 9 lakhs. Since this is a massive programme and the present administrative facilities may not be able to cope with the implementation of this programme through regular classes and also since the required number of children of this age-group may not be forthcoming, as they are compelled to leave schools after lower primary stage in order to make contribution, however meagre, to the low earnings of their families, it is suggested that the additional enrolment of 36 lakhs may be divided into 15 lakhs in regular classes and remaining 21 lakhs in part-time classes for student-workers—a programme recommended by the Education Commission. Nevertheless the task involved is very huge and concerted efforts, are needed to effectively implement this programme.

4. As the development of primary education shows great variation from state to state, the programme for the expansion of primary education will have to be drawn separately in respect of each state, keeping in view the stage of development and the local factors affecting the development of primary education.

5. One of the major difficulties in the way of the implementation of the Directive Principles of the Constitution for the provision of universal primary education to the children of the age-group 6—14 has been the paucity of resources for launching any vast programme for expansion of primary education. The average annual cost per child at the lower primary stage of education, based on the present average salary of Rs. 200 per teacher plus 10 per cent as non-teaching costs, comes to Rs. 72/-, if the teacher-pupil ratio is taken as 1:40. Similarly the average annual cost of educating a child in the upper primary stage, based on 30 pupils per teacher and a 50 per cent higher cost than that at the lower primary stage, comes to Rs. 105 per student. On the basis of these costs, if universal education is provided to all children of the age-group 6—14 the total expenditure involved in providing primary education to all children of the age-group 6—14 (about 11.6 crores in number) in 1970-71 is estimated to be about Rs. 960 crores, which is even more than the total estimated expenditure of Rs. 950 crores on education as a whole. In other words, it will be tantamount to our spending about 3 per cent of the national income on universal primary education alone, whereas the present investment on education as a whole comes to 2.9 per cent of the national income. Keeping in view this tremendous difficulty and the need for effective implementation of the proposed programme of expansion of primary education, we would indicate below some measures that could be adopted in order to bring about a reduction in cost. Nevertheless, from various points of view a high priority will have to be accorded to this programme.

6. The following are some of the measures that may be adopted for reduction in cost, subject to administrative feasibility:—

(i) *The adoption of the double-shift system in classes I & II*: Nearly 60 per cent of the total enrolment at the primary stage is in Classes I and II. If the double shift system is adopted in these classes, as recommended in the Fourth Plan, the pupil-teacher ratio is increased, the average annual cost will be decreased. This system was adopted in England, during the early stages of that Country's expansion programme of elementary education. Even in India, this measure has been successfully adopted in Kerala State.

(ii) *Part-time Education*: Another measure recommended by the Education Commission and emphasised in the Fourth Plan is to provide part-time education to all children who cannot attend schools on a full time basis. At present nearly 75 per cent of the children drop-out before reaching class VIII. Most of these children are the helpless victims of poverty and they are required to leave schools in order to lend a helping hand to the family income. If a programme of part-time education with suitable hours of schooling is adopted, these children can be brought into the schools to complete their elementary education. This programme can be organised in the existing school buildings and with the existing equipment and by utilising the services of educated unemployed young persons by giving them a suitable honorarium. Besides reducing costs (by about 50 per cent) this programme will provide educational facilities to such helpless children, open new direct employment opportunities for a substantial portion of the educated unemployed and bring nearer the goal of universal elementary education for the children upto the age 14.

(iii) *Community Participation*: Another aspect of the new strategy is to involve the local community, organisationally and financially, in the development of primary education; this will assist in securing the much needed resources for the expansion programme of primary education. The experiment carried out in the State of Tamil Nadu in this regard justifies the adoption of this programme in other States. In fact, this system should be organised and expanded in such a way that all the non-teaching costs such as the construction and maintenance of school buildings, the provision of free text books, clothing and meals to the needy children and the provision of playgrounds might be borne by the local community.

(iv) *Earmarked Central Assistance*: In order to ensure that the programme of expansion is in fact executed in the States, it is essential to ensure that the outlay provided for Elementary Education, including Central Assistance, is spent on this programme.

7. Another major difficulty in the way of effective implementation of the programme of universal elementary education is the problem of dropout of children in primary school stage. Of every 100 children that are enrolled in Class I, only about 40 are able to reach Class V and about 25 reach class VIII. This is mainly due to: (i) poverty of the parents who are forced to withdraw their children from schools; and (ii) dull and uninspiring character of most of our primary schools which do not attract and/or fail to retain children for an adequate period. To overcome this difficulty, the quality of primary education should, we feel, be improved by expanding improvement programmes like mid-day meals, free supply of text books to the needy children, provision of more facilities for the children belonging to Scheduled Castes and Scheduled Tribes, special programmes for girls' education, improvement in the quality of teacher as suggested by the Education Commission. In addition, the condition of the school building would need much improvement. A phased programme of construction of new school buildings, where necessary, should be devised and implemented; the proper maintenance of existing school buildings should also receive due cosideration. These programmes besides improving the quality of education will enlarge employment opportunities for the unemployed.

8. Another factor affecting the quality and efficiency of the primary education is the existing system of single teacher schools. About 35 per cent of primary schools are single teacher schools; these are mostly to be found in rural areas. This system of single-teacher primary schools should be reviewed and wherever possible converted into multi-teacher schools. Besides improving the quality of education in primary schools, it will offer more employment opportunities for unemployed teachers.

9. If the programme, as suggested above, is implemented, it will create direct employment opportunities for the educated unemployed as teachers, Inspectors of schools and in other supervisory and clerical positions. According to this programme an additional enrolment of 40 lakh children in the lower primary and 15 lakh children in the regular classes of upper primary stages of education has to be made every year upto 1978-79. Based on the present teacher-pupil ratio of 1:40 and 1:30 respectively in these stages, nearly one lakh teachers would be required for the lower primary and about 50,000 for regular classes for the upper primary stages i.e. a total of 1.50 lakh teachers in all. This programme could thus generate direct annual employment opportunities for nearly 1.50 lakh teachers. This will certainly create a dent on the problem of unemployed trained primary school teachers numbering about 1.52 lakhs and registered with the employment exchanges. In succeeding years it would also give employment opportunities to nearly one lakh annual out-turn of primary school teachers from the training institutions as well as to the 18.00 lakh under-graduates already registered with the employment exchanges. In addition to this, programme would provide on a continuing basis employment opportunities for about 1200 Assistant Inspectors of schools at the usual rate of one Inspector for 125 additional teachers. The programme of providing part-time education to 22 lakh children would provide ample employment opportunities to the educated unemployed, who can be appointed part-time teachers for non-schooling children. The suggested improvement programme of teachers' training and the conversion of single-teacher schools into multi-teacher schools will also open further employment opportunities for teachers.

APPENDIX V

Estimated Cost Involved in the Expansion of the Scheme of Primary Education for Generating Additional, Employment Opportunities.

(Rupees in crores)

Programme	Average Unit Cost in Rs.	Total cost during remaining year (1973-74) of the Fourth Plan	Total cost during the Fifth Plan					
			1974-75	1975-76	1976-77	1977-78	1978-79	Total
1	2	3	4	5	6	7	8	9
1. Additional annual enrolment of 40 lakh children of the age-group 6—11 will create employment opportunities for 1·00 lakh teachers; teacher-pupil ratio being 1 : 40	Rs. 60 per student per annum	24·00	24·00	48·00	72·00	96·00	120·00	360·00
2. Additional enrolment of 36 lakh (15 lakhs for regular classes and 21 lakhs for part-time education) children will create employment opportunities for 0·50 lakh regular teachers and quite a large number of employment opportunities for educated unemployment as part-time teachers; teacher-pupil ratio being 1 : 30.	Rs. 80 per student per annum for regular classes and	12·00	12·00	24·00	36·00	48·00	60·00	180·00
	Rs. 40 per student per annum for part-time classes	8·40	8·40	16·80	25·20	33·60	42·00	126·00

APPENDIX V—contd.

1	2	3	4	5	6	7	8	9
3. Provision for 1,200 school Inspectors at the rate of one inspector for every 125 additional teachers	Rs. 400 per month per Inspector	0·57	0·57	1·14	1·71	2·28	2·85	8·55
4. Provision for Improvement Programme	Ad hoc	25·00	25·00	50·00	75·00	100·00	125·00	375·00
5. Provision for school buildings ...	Ad hoc	25·00	25·00	50·00	75·00	100·00	125·00	375·00
		94·97	94·97	189·94	284·91	379·88	474·85	1424·55

Explanatory Notes :

(*i*) The average annual cost, based on average salary of Rs. 200 per month per teacher plus 10 per cent old age benefits etc. and 10 per cent non-teaching cost and 1 : 40 teacher pupil ratio in lower primary stage, comes to Rs. 72 per student in lower primary stage.

In actual practice, however this cost differs from State to State and in fact in the educationally backward States like U. P. and Bihar where there is great scope for the expansion, the average annual cost is substantially low. Therefore average annual cost of Rs. 60 per additional student has been taken as the basis for working out the total cost involved in the education of 38 lakh annual additional children of the age group 6—11.

(*ii*) The average annual cost per student in upper primary stage, based on the formula of 50 per cent more cost than in lower primary stage and 1: 30 teacher-pupil ratio comes to Rs. 105 but on the basis of a very low rate of teaching cost in educationally backward State, in which larger number of additional children of the age-group 11—14 are to receive education, the average annual cost is assumed to be Rs. 80. For part-time education, where the cost is estimated to be 50% per cent less than in regular classes, the average annual cost per additional child is assumed to be Rs. 40.

(*iii*) The cost for the remaining one year of the Fourth Plan has been calculated for additional children for one year only and since the expenditurs of the Fourth Plan will be converted into maintenance expenditure, it has not been carried over to the Fifth Plan while calculating the cost for the year comprising Fifth Plan period. In case of Fifth Plan, the total cost have been worked out by including the cost of the students brought under the programme in the previous year(s).

APPENDIX VI

Modus-Operandi of the Programme of 'Mass Literacy'

The programme of 'Mass Literacy' may be included in the Fifth Plan and it should be suitably phased in such a way that at least 50 million adults of the age-group 15—44 are covered under the programme by the end of the Fifth Plan at the annual rate of 10 millions. e remaining year of the Fourth Plan (1973-74), pilot projects ay be launched in about 20 district preferably the same as chosen under the scheme of 'Intensive Educational Development Projects' from the point of view of administrative convenience, so as to cover at least 2 lakhs of illiterate population of each district to make the total coverage of 4 million illiterates in these districts. These pilot projects may serve as forerunners of the massive programme of eradicating illiteracy during the Fifth Plan, because the results of these projects will help in drawing up a practical and massive programme of "Mass Literacy". The scheme may then be extended nearly to 100 districts which should be chosen on the prefential basis of the number of educated unemployed in those districts. For this programme to be effective, a comprehensive follow up programme will have to be launched.

2. With a class of short duration of 1½ hour per day and that too in the evening, part-time teachers could be appointed and each teacher with a teacher-pupil ratio of 1 : 35 can teach 2 classes per day over a period of six months. This way each teacher could cover almost 70 illiterates over six months period or 140 illiterates over a full year. To cover the target of 4 million illiterates in the year 1973-74, about 30,000 teachers could be employed in that year. Then when this programme is extended to Fifth Plan to cover 50 million illiterates or 10 million every year, the number of teachers who could be employed under this scheme will be about 80,000 every year. So quite a substantial number of employment opportunities can be created by adopting this programme which will be a boon to a large number of educated unemployed, particularly, the Matriculates and equivalents, whose number come to about 18 lakhs.

3. The remuneration to be paid to these teachers could be fixed at Rs 100 per month. Adding a sum of Rs. 10 per adult illiterate (including Rs. 2/- for follow up programme), the total expenditure per teacher per annum could be placed at Rs. 2,500 per annum. The total expenditure on the suggested programme for the remaining one year of the Fourth Plan will thus come to about Rs. 750 crores. For the Fifth Plan period, the annual expenditure involved for the implementation of this programme is estimated to be Rs. 20.00 crores to make the total of Rs. 100,00 crores for the plan period as a whole. So with a provision of Rs. 100.00 crores in the Fifth Plan for this programme, we can serve the twin purpose of eradicating illiteracy to a great extent on the one hand and open direct employment opportunities for nearly a lakh of educated unemployed on the other.

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